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Vol. 1

ENVIRONMENTAL ASSESSMENT

Crow Boundary Settlement Act

Phase 1 Land Exchange

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1.0 INTRODUCTION AND BACKGROUND

1.1 Background

The Crow Boundary Settlement Act (CBSA) of 1994 mandates, among other things, land exchanges between the state and federal government to redress a century-old boundary survey error. The Crow Indian Reservation was created in 1851. In 1868 a Treaty with the Crow Tribe formally established the 107th Meridian as the eastern boundary of the Reservation. In 1891 this eastern boundary was surveyed in an attempt to establish the specific on-the-ground location of the 107th Meridian. Later, as technology improved, it was discovered that this survey had strayed to the west of the actual on-the-ground location of the 107th Meridian. The effect of this survey error meant that, for years, the Crow Tribe had been denied land that had actually been granted to it from the Wyoming-Montana border on the south to the Yellowstone River on the north, including land along the western edge of the Northern Cheyenne Indian Reservation.

Figure 1-1 is a map representation of the survey error, and indicating separate parcels that are specifically addressed in the CBSA. For many years after the discovery of the survey error the Crow Tribe sought resolution of the problem via congressional legislation. Finally, on November 2, 1994 the Crow Boundary Settlement Act was enacted and signed into law by President Clinton. This legislation, in part, provided for the following:

1. It reaffirmed the true 107th Meridian location as the eastern boundary of the Crow Reservation. This re-affirmation had the effect of moving the erroneous monumented boundary easterly to its correct on-the-ground location for the 107th Meridian (Parcel 1 in Figure 1-1).

2. It created an agreement whereby the Crow Tribe relinquished its claim to land which was located in the Northern Cheyenne Indian Reservation as a result of correcting the on-the-ground location of the 107th Meridian (Parcel 2 in Figure 1-1). That is, the boundary of the Northern Cheyenne reservation was not moved.

3. It provides for a relinquishment by the Crow Tribe of surface and mineral ownership claims on Parcels 3 and 4 (Figure 1-1).

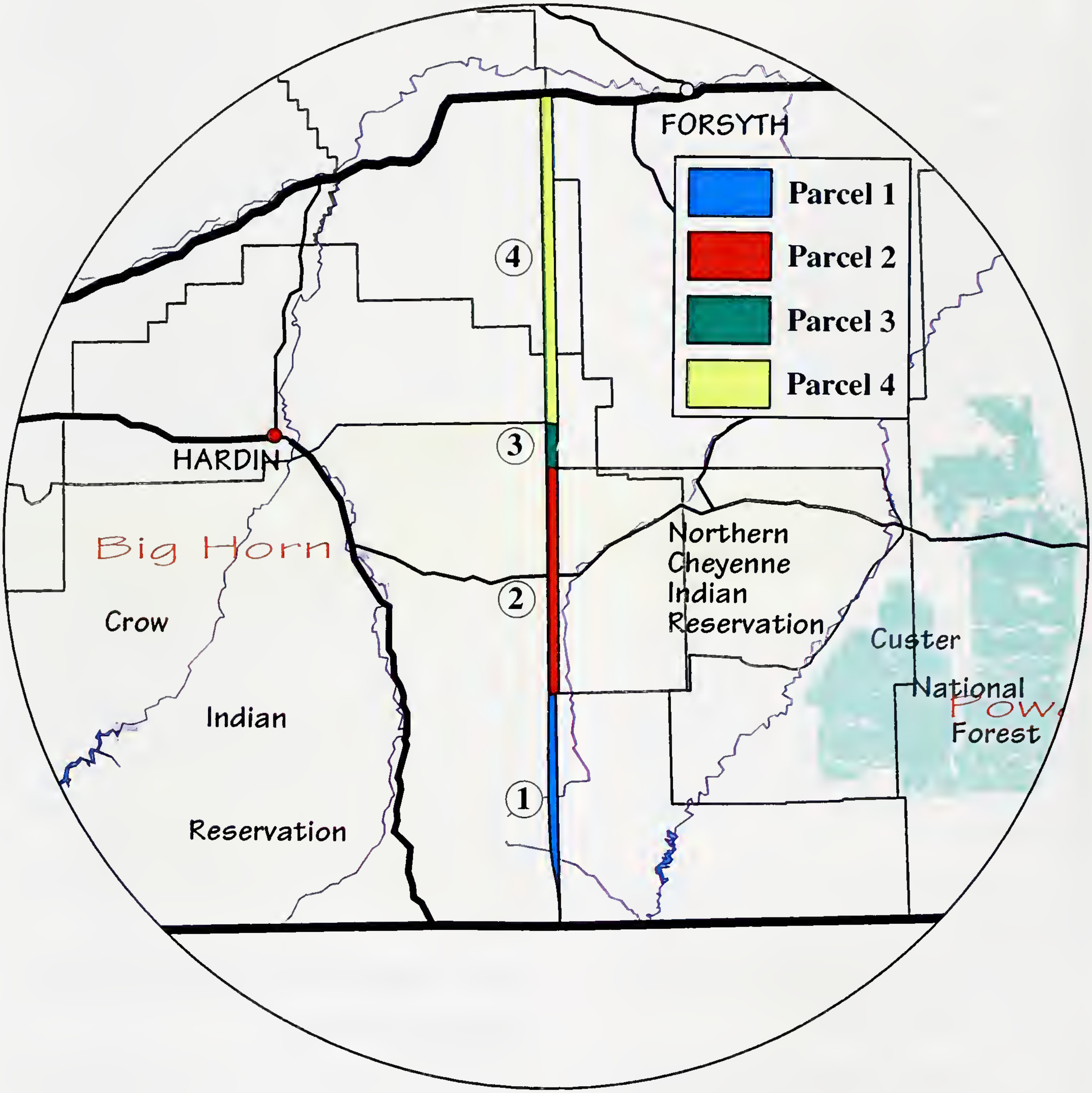
4. In compensation for relinquishment of lands on the Northern Cheyenne Reservation and north to the Yellowstone River, it created a mechanism whereby the Crow Tribe could acquire state-owned land and private land located inside of the Reservation through the land exchange process. Public land, which is managed by the Bureau of Land Management (BLM) and located outside of the Reservation, is to be used as a means of completing the required land exchanges. For the first five years following CBSA enactment, the priority is to focus on exchanges of the state school trust lands within the reservation. These lands are administered by the Trust Lands Management Division of the Department of Natural Resources and Conservation (DNRC). All land exchanges involving school trust lands must be approved by the Board of Land Commissioners (Land Board) and be done in accordance with state statutes and policies adopted by the Land Board.

State lands inside the reservation (surface ownership only) were originally granted to the State of Montana by Section 16 of the 1920 Crow Allotment Act to provide for the education of the Crow Indian children in the public schools. These state lands were originally Crow Tribal trust lands and were purchased from the Tribe by the federal government and granted to the state for the maintenance of the common schools on the reservation. If the exchanges are approved, these state lands will once again become Crow Tribal trust lands and the state will receive lands of equal value from the federal government (represented by the Bureau of Land Management or BLM) to compensate for the land given up on the Crow reservation.

1.2 Purpose and Need for the Proposed Action

The proposed action, in its most general sense, is to exchange all of the state school trust lands on the Crow reservation for selected BLM lands of equal value off the reservation. The state lands thus acquired by the BLM will be held in trust by the Department of Interior for the benefit of the Crow Tribe. It is expected that as many as three separate exchanges will be necessary to exchange all of the state lands within the Crow Reser-

Figure 1-1 107th Meridian Settlement



vation. While this environmental assessment (EA) addresses only the first of these exchanges, understandings between the agencies, programmatic agreements, and much of the environmental information developed and impacts analyzed will be common to each exchange. Thus, this EA will provide the basis for tiering[1] future EA's on subsequent exchanges.

The purpose of this environmental assessment is to comply with the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA) to address the impacts of the first exchange of land which has been proposed pursuant to the CBSA. This exchange of land is between BLM and the DNRC. The BLM land is located in southwestern Montana in the Dillon Resource Area and the State land consists of scattered parcels and tracts[2] within the Crow Reservation entirely surrounded by either tribal trust lands[3] or individual Indian allotments.

1.3 Public Scoping

Initially, before any exchanges were proposed, the CBSA Steering Committee[4] sponsored two public hearings in Billings, Montana and one at Crow Agency, Montana, to inform the public of the details of the CBSA and the concepts relative to land exchanges which could be used to implement the law. Generally, most of those who had grazing leases on the state land in the Crow Reservation, which would be exchanged out of state ownership, strongly objected to the action. Their reasons related to the impacts it could have on their ranching operations because they could not be guaranteed a long-term continuation of a grazing lease on that land after ownership had transferred. The Crow Tribe and the tribal members who spoke at the hearings were in strong support of land exchanges in order to transfer all state-owned land to the United States, as these lands would become tribal trust lands.

After a land exchange proposal was developed, agreed upon by DNRC and BLM, and approved in concept by the Land Board, the Steering Committee held three public meetings. These meetings were held at 7:00 p.m. at the following locations and dates:

- April 15, 1996----BLM Butte District Office, Butte, Montana
- April 29, 1996----BLM Dillon Resource Area Office, Dillon, Montana
- April 30, 1996----St. Dennis Hall, Crow Agency, Montana

The issues at the Butte and Dillon meetings were mostly related to reserving existing access on lands transferred out of federal ownership. One concern also related to differences in Interagency Travel Plan implementation between BLM lands (which allow vehicular travel off-road) and state lands (which do not allow vehicular travel off of designated routes). At the meeting held at Crow Agency, no issues were brought forth mainly because very few, if any, grazing lessees of the state land were in attendance. Most of those in attendance at the Crow Agency meeting were tribal members and voiced strong support for the land exchange.

1.4 Conformance with Land Use Plans

1.4.1 BLM Lands

The exchange of the BLM lands would be in conformance with Dillon Resource Area Management Framework Plan (MFP) completed in September of 1979. The Dillon MFP provides for the exchange of public lands to achieve greater management efficiency for the overall management of BLM lands in the Resource Area. The MFP also provides that BLM shall identify BLM land suitable for exchange when it benefits federal management programs or meets other management objectives.

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[1] In the "tiering" process, an environmental analysis is published in a series of volumes, each building off the earlier ones. Each volume is said to "incorporate by reference" the information in the earlier volumes. (40 CFR 1508.28)

[2] Terms like tract, parcel, property, and lands are used interchangeably in this EA in general usage referring collectively to lands involved in the exchange. When describing specific lands, the term "parcel" is generally used for a property that has a unique, single legal description and the term "tract" is used when two or more parcels that are adjacent or in close proximity are described by a common identifier or tract name.

[3] Since both state and tribal "trust" lands are mentioned in this EA, it is important not to confuse the two. State trust lands are owned by the State of Montana and are managed to provide income to the school trust fund. Tribal trust lands are owned by the federal government and are held in trust for the benefit of the Crow Tribe.

[4] The CBSA Steering Committee consists of representatives from the Montana Association of Counties, Montana Department of Natural Resources and Conservation, the Crow Tribe, the Bureau of Land Management, the Solicitor's Office of the Department of Interior, and is chaired by the Bureau of Indian Affairs representative.

The proposed exchange is also in conformance with BLM's Supplement to State Director Guidance for Resource Management Planning in Montana and the Dakotas for Land Pattern Review and Land Adjustment (Supplement). This Supplement was published in 1984 to provide guidance for all major types of land adjustment. Three categories --retention, disposal, and acquisition--- were established to provide guidance in managing the public lands and making decisions concerning specific land adjustment actions. Through the application of criteria also given in the Supplement, retention and disposal zones were identified for Montana. Retention zones predominantly contain public lands in fairly consolidated blocks where BLM intends to retain existing public lands and acquire additional lands. Disposal zones are areas where BLM lands have been identified for potential removal from BLM administration--- preferably through exchange. All of the BLM parcels being considered for use in this exchange are in a disposal zone.

1.4.2 State Land

DNRC does not have a formal land use plan, but does have a mandate for multiple use management (MCA 77-1-203, et.seq.). In addition, the Land Board has established a policy with seven criteria to be considered in the evaluation of land exchanges. These criteria are applied to both the state and BLM land and form the basis for a Land Board decision to exchange lands. These criteria are outlined in Table 1-1.[5] The Board recognizes that some land exchanges may clearly be in the state's best interest, but may fail to satisfy one or more of the criteria in Table 1-1. The first three criteria are based on legal requirements and cannot be waived.

1.5 Relationship to Statutes, Regulations, Mutual Agreements, or other Plans

The BLM land proposed for exchange would be processed in accordance with Section 206 of the Federal Land Policy and Management Act of 1976, as amended, and the regulations at 43 CFR 2200. The state land proposed for exchange would be processed in accordance with the State Land Board Land Exchange Policy, which enumerates constitutional, statutory, and advisory mandates to be met with any land exchange involving school trust lands. Where there is a current BLM grazing lessee, that lessee would continue as the lessee of record when the BLM land is transferred to the state, by mutual agreement of the agencies. Upon expiration of the state lease, the lessee will then be subject to competition for the lease and will have the opportunity to meet or match a competitive bid for the grazing privileges. This opportunity is referred to as a "preference right", since it allows an existing lessee to ultimately prevail in keeping the lease, if it is in the lessee's economic self interest to do so.

Of the lands to be exchanged, those managed by BLM are in Beaverhead County and those owned by the state are in Yellowstone and Big Horn counties. None of the counties have a county-wide comprehensive land use plan that would affect this action. Yellowstone County has a comprehensive plan for areas in the immediate vicinity of Billings, but the plan does not include the state lands on the Crow Reservation involved in this exchange.

All of the BLM properties are currently leased for livestock grazing. Ownership of those parcels would be transferred in conformance with the grazing regulations at 43 CFR 4120. This regulation provides for a two-year notification to grazing lessees prior to the transfer of the BLM land. All of the state lands are also currently leased for livestock grazing and the transfer of the ownership of those lands would be completed in accordance with MCA 77-2-201, et.seq.

In addition, DNRC has agreed to allow BLM to retain easements for existing roads or trails which have legal access and are of public record that provide access to adjacent state or other federal lands. No mineral values are involved and none are expected to be transferred. Finally, for BLM lands acquired by the state, the state will recognize existing BLM lessees as the lessees of record for purposes of establishing a state preference right.

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[5] The Land Board Exchange Policy, which includes the seven criteria mentioned, was adopted by the Land Board in 1994.

Table 1-1 Montana Board of Land Commissioners - Land Exchange Criteria

Table 1-1
Montana Board of Land Commissioners - Land Exchange Criteria

Criteria		Description
1.	Equal or greater value	Land to be acquired by the state must be at least as valuable as the state land being exchanged. The starting point for this determination is the value, in terms of money, of real estate in a typical market as determined through an appraisal. An attempt should also be made to include location, proximity to public lands, recreational opportunities, scenery, and other amenities in determining relative values.
2.	State land bordering on navigable lakes and streams	State lands that border navigable lakes, streams, and other bodies of water with significant public use values may only be exchanged for lands that border similar bodies of water.
3.	Equal or greater income to the trust	A land exchange must result in the state receiving equal or greater income for the trusts.
4.	Equal or greater acreage	As a general rule, the Board prefers to receive equal or greater acreage, but will consider receiving less acreage in return for substantially higher value or income, or both.
5.	Consolidation of state lands	A land exchange should be at least neutral in its net effect on the consolidation of state land. An exchange should not sever a mineral estate from a surface estate. The DNRC will place priority on exchanges which result in consolidation of state lands.
6.	Potential for long term appreciation	The land acquired by the state should be as likely to increase in value or revenue potential as the state land exchanged.
7.	Access	A land exchange should not diminish the amount of access to state lands or other public lands. Accessible state land that is proposed for exchange should be replaced with acquired lands that offer similar recreational opportunities.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The proposed action is to exchange all of the state lands described in Table 2-1 for some of the BLM lands described in Table 2-2. In order to help BLM meet the mandate of the CBSA, all state parcels under initial consideration will be exchanged with the BLM for lands of equivalent value, as determined by appraisal and in accordance with the Land Board Exchange Policy. Of the BLM lands, the 680 acre tract bisected by the county road on the West Fork of Blacktail Deer Creek is the number one priority for state acquisition in the exchange. Some portion of the remaining BLM lands may be exchanged, as needed, to equalize appraised values. Any BLM lands not involved in this first exchange may be used in subsequent exchanges with the State of Montana or other entities.

The state land consists of 11 properties totaling 5355.92 acres scattered throughout the Crow Reservation (Table 2-1). All of these tracts or parcels are surrounded by lands which are either owned by the Crow Tribe or tribal members. These lands are identified on Figure 2-1. The BLM land consists of five tracts and parcels with a total acreage of 1851.30 acres (Table 2-2). One of these tracts is located about 30 miles southeast of Dillon on Blacktail Deer Creek (designated "Priority No. 1 Tract" on Figure 2-2) and the other four tracts and parcels are located at the eastern end of Centennial Valley (designated "Priority No. 2 Tracts"on Figure 2-3). All of these lands are bordered by state land on at least two sides and some have state land on three sides. The tract and parcel names correspond with the identifiers listed in Table 2-1 and 2-2.

The acreage of BLM land exchanged will be significantly different from the acreage of state land. This is because the BLM tract on the West Fork of Blacktail Deer Creek and some of the other BLM lands have commercial timber and are thus more valuable than the rangeland of the state tracts and parcels on the reservation. Because the exchange is to be based on equal values, it will require fewer BLM acres to equal the value of the grazing lands being exchanged by the state.

Table 2-1 State Lands involved in the First Crow Boundary Settlement Act Exchange

Table 2-1
State Lands involved in the First Crow Boundary Settlement Act Exchange

Legal Description[6]	Tract/Parcel Identity[7]	Lease Expiration	Acres	County
T5S, R26E, S 16, SE¼NE¼ and SE¼	Pryor Creek	2008	200	Big Horn
T3S, R28E, S 36, NE¼SE¼	Woody Mountain	2008	40	Yellowstone
T3S, R29E, S 10 and 11, All	Woody Creek	2004	1280	Yellowstone
T5S, R30E, S 03, Lots 1-4, S½N½ and S½	Muddy Creek	2005	635.92	Big Horn
T6S, R33E, S 12, NE¼	Rotten Grass Creek	2007	160	Big Horn
T1S, R35E, S 16 All	Dry Creek	2008	640	Big Horn
T2S, R35E, S 16 All	Little Bighorn	2008	640	Big Horn
T3S, R35E, S 16 All	Custer Creek	1999	640	Big Horn
T2S, R36E, S 16 All	Tullock Creek	2008	640	Big Horn
T4S, R37E, S 01 S½N½ and S½	Davis Creek	2004	480	Big Horn
Total			**5355.92**	

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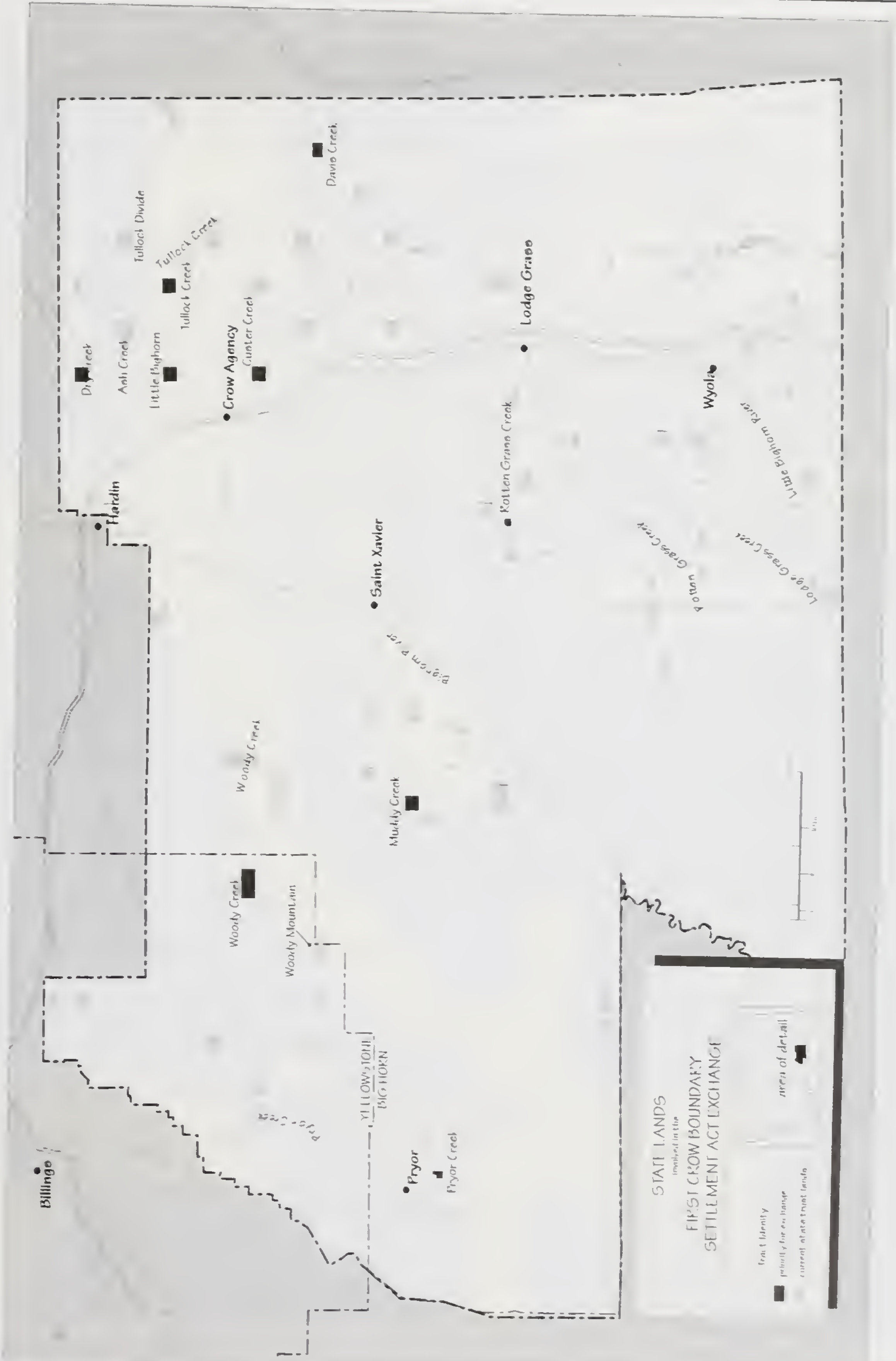
[6] Legal descriptions in Tables 2-1 and 2-2 are Principal Meridian Montana descriptions.

[7] Identities in Tables 2-1 and 2-2 are used to identify tracts and parcels throughout the Environmental Assessment without having to resort to the legal descriptions. Descriptive terms in the identities denote nearby topographic or drainage features and are used only for this exchange.

Figure 2-1 State Lands



2.2 *Alternatives*

2.2.1 Proposed Action or Exchange Alternative

In a general sense, this alternative involves the voluntary exchange of all state lands on the Crow reservation for federal lands of equal value managed by BLM. The CBSA mandates an overall exchange of lands equivalent in value to 46,625 acres selected by the state since passage of the Crow Allotment Act in 1920. Of those 46,625 acres once owned by the state, approximately 33,933 acres are still in state ownership. The CBSA places an initial priority for the first five years after passage of exchanging BLM lands for the remaining state land on the reservation. The BLM is expected to initiate a private exchange program that does not involve state land to provide the Crow Tribe with lands equivalent to approximately 12,700 acres no longer owned by the state.

In a more specific sense, the overall exchange is being done in phases and the proposed action for this phase is to exchange the 5335.92 acres identified in Table 2-1 for BLM lands of equivalent value from the 1851.3 acres of BLM land in Table 2-2. These lands are listed in order of priority for acquisition. Equivalent values established by appraisal, shown later in this environmental assessment, dictate that the state would acquire the Blacktail Creek, Narrows Creek, and Elk Mountain A and B properties in this exchange, with some residual value from the Elk Mountain B tract and the full value of the Sandhills parcel to be used in subsequent exchanges.

2.2.2 No Action

This alternative is required by NEPA and MEPA and would be considered a viable alternative if it is determined that no action (i.e. no exchanges) is in the best interest of the state, considering the values received, the annual benefit to the school trust, and the environmental impacts of the proposed action. This alternative will be the result if the state does not exchange lands with the BLM. However, it does not mean that exchanges will not occur, since BLM will still be under a CBSA mandated obligation to provide to the Crow Tribe, through its private exchange program, the equivalent of any lands not exchanged with the state. That is, if any of the 33,933 acres owned by the state are not exchanged, then the BLM private exchange program will be increased by an equal amount of acreage, so that the overall exchange is still based on the value of 46,625 acres.

Table 2-2 BLM Tracts involved in the First Crow Boundary Settlement Act Exchange

Table 2-2
BLM Tracts involved in the First Crow Boundary Settlement Act Exchange

Legal Description	Tract/Parcel Identity	Acres	County
T12S, R6W, S 10, W½SW T12S, R6W, S 15, E½,SW¼, S½NW¼, and NW¼NW¼	Blacktail Creek	680	Beaverhead
T13S, R1E, S 18, NE¼SE¼	Narrows Creek	40	Beaverhead
T13S, R1E, S 33, Lots 1-7, E½NW¼, NE¼SW¼,N½SE¼	Elk Mtn. A	489.82	Beaverhead
T14S, R1E, S 09, Lot 3 T14S, R1E, S 04, Lots 8,9,12, and 13	Elk Mtn. B	201.48	Beaverhead
T13S, R1W, S 22, W½E½, NW¼,N½SW¼,SE¼SW¼	Sandhills	440	Beaverhead
Total Acres		**1851.3**	

Figure 2-2 Priority 1 BLM Lands

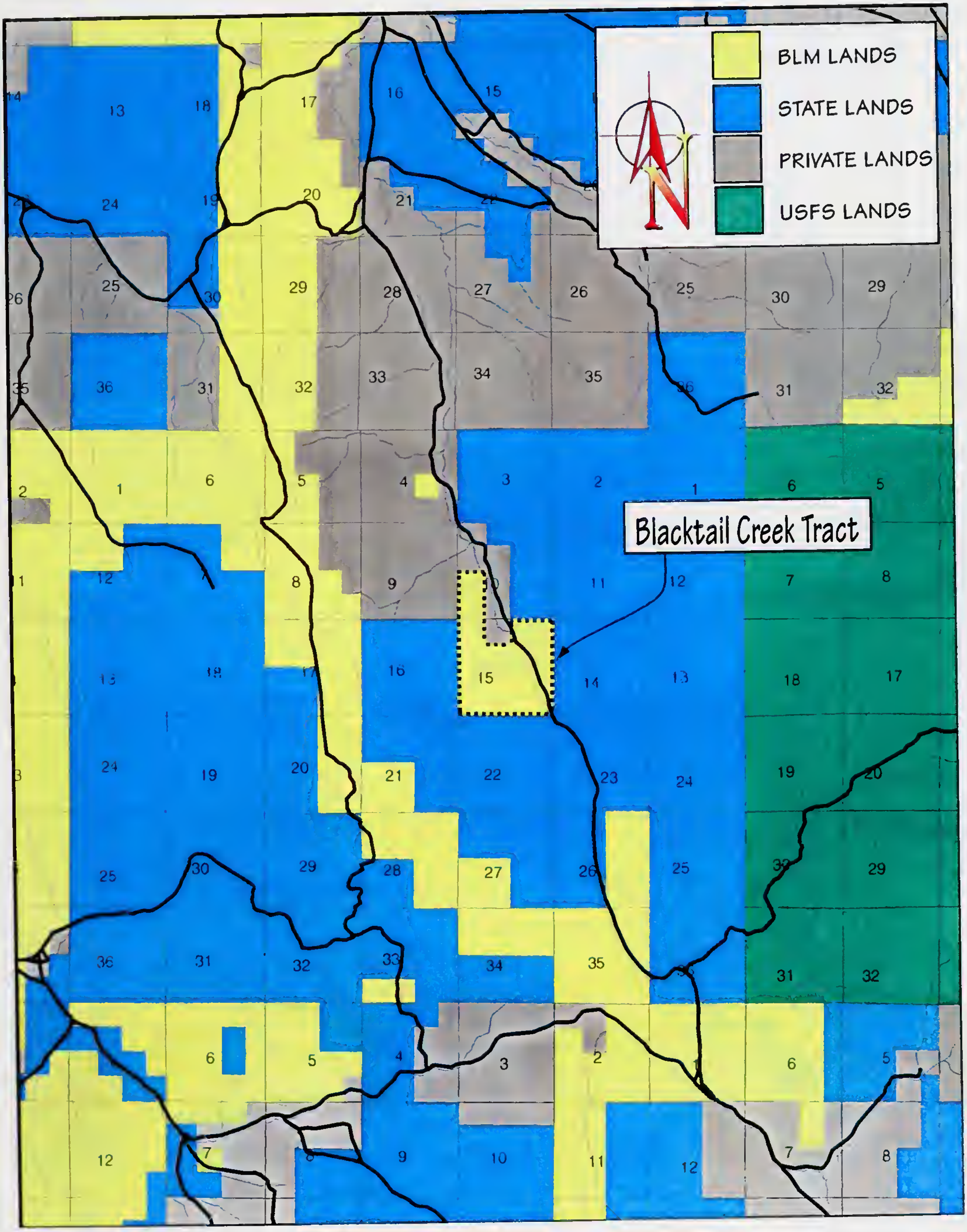
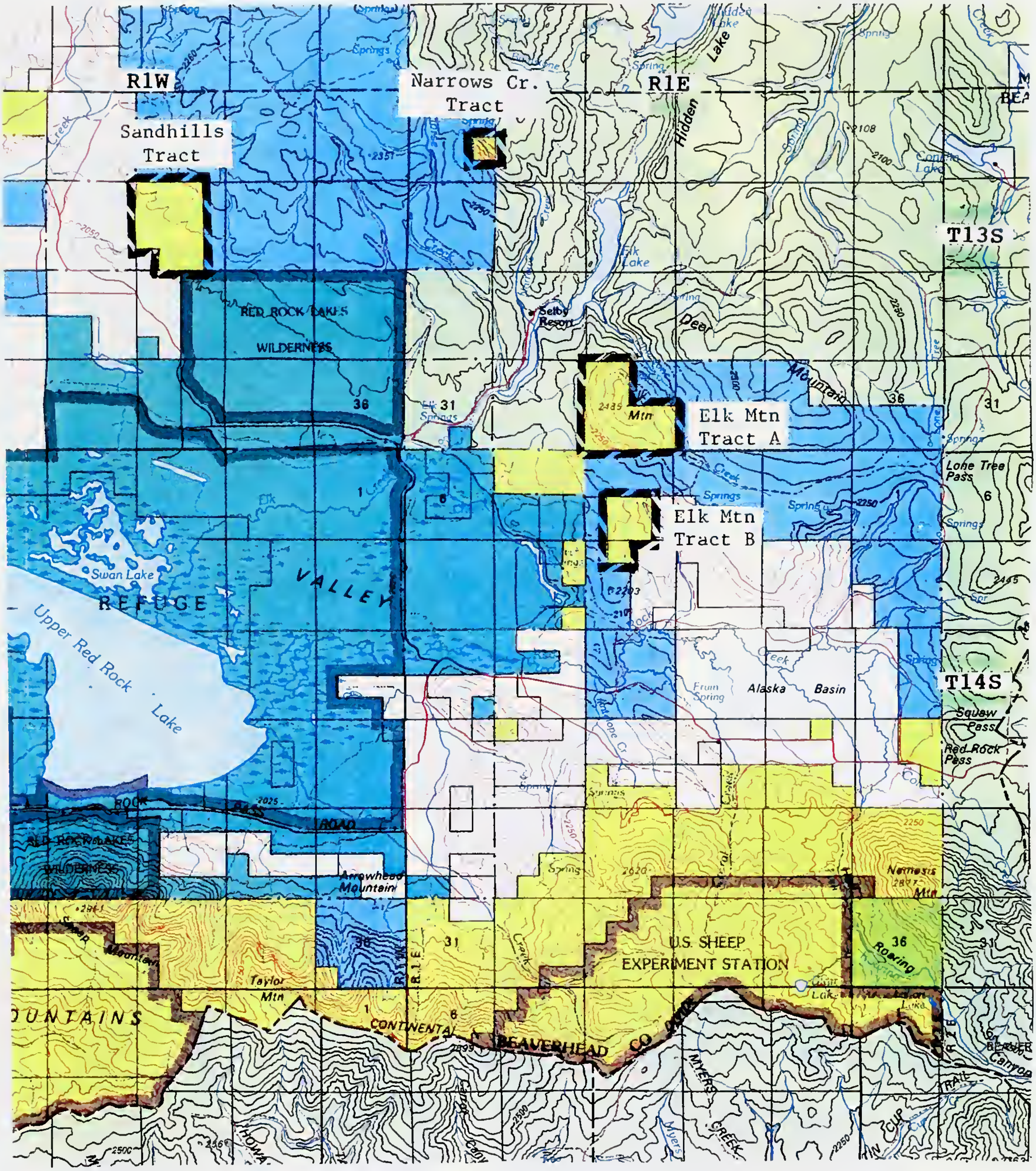


Figure 2-3 Priority 2 BLM Lands



2.2.3 Mitigated Exchange Alternative

For state land within the Crow Reservation, this alternative has potential for reducing or mitigating specific impacts on current state lessee's ranching operations. This alternative will evaluate various actions that might be taken by the Land Board to mitigate state lessee impacts. These actions include the potential consideration of delayed implementation until the end of the current lease term to allow more time for a lessee to adjust operations; granting access easements to lessees before the exchange to ensure future access to other lands; making exchanges contingent on an equitable sharing of costs between parties if the exchange requires fencing (tribal resolution requires the non-Indian to fence to keep livestock from trespass on a tribal lease). Another mitigated exchange that could be suggested and evaluated, but not enforced without Crow Tribal concurrence, would be the continued granting of lessee preference for a transitional period of time. The lessee would have to pay more for the grazing lease, but would have some additional time to resolve loss of the lease. The final mitigated exchange alternative would allow state lessees to propose exchanges for less critical deeded lands owned by the lessee (with Crow Tribal approval, since the Tribe would ultimately be the recipient of the land). This would occur as a three-way exchange. Deeded private land would be offered in exchange for state land which would simutaneously be exchanged for BLM land.

2.2.4 Selection of other BLM Lands

Another alternative would be to select other lands within the respective boundaries of the Butte District (BLM) and the state land managed by the Central Land Office (DNRC). Prior to the selection of lands contained in the proposed action, BLM and DNRC staff met on several occasions in order to develop a list of lands that would be suitable for continued study for disposal and acquisition. DNRC felt the lands studied under this environmental assessment would contain the elements necessary to obtain the approval of the State Land Board. Fulfillment of the requirements of this act requires the state's voluntary participation, as federal legislation cannot mandate the disposal of state properties without the consent of the State of Montana. Therefore, BLM can only offer lands that the DNRC is willing to accept.

Since this is the first phase of a multi-phase exchange program, any lands not discussed in this proposal but later identified for possible acquisition by the state, could be considered in one of the future proposals. This assessment will only discuss the impacts of disposal and acquisition of the present list of selected lands. This alternative, therefore, will not be analyzed further.

2.2.4 Other Alternatives Considered but Not Carried Forward

An alternative way of accomplishing compensation for the Crow Tribe is to provide money equivalent in value to the value of the state lands and then allow the Tribe to use that money to purchase private fee lands inside the reservation and convert them to tribal trust lands. This alternative would require either amending the CBSA or new legislation that would have Congress appropriate the necessary funds. This alternative was discussed as an option at the November 1995 Land Board meeting. The Crow Tribe did not support opening the CBSA to amendment or new legislation to provide funds for purchasing private lands. The Tribe expressed a specific interest in a return of the state lands which were Tribal trust lands prior to the passage of the 1920 Crow Allotment Act and subsequent selection of lands by the state. Without tribal support for new federal legislation, this option was not considered particularly feasible and the Land Board directed DNRC to proceed with exchanges under the CBSA.

3.0 AFFECTED ENVIRONMENT

This chapter describes the portions of the physical, biological, social and economic environments that would or might be affected by the implementation of any of the alternatives for the proposed exchange. This chapter presents the existing conditions as a baseline for the analysis of potential impacts that are examined in Chapter 4.

3.1 BLM Lands

3.1.1 General Geography, Topography and Aesthetics

The BLM properties are located in Beaverhead County about 15 miles northeast of Lima in upper Blacktail Deer Creek and north and northeast of Red Rock Lakes Wildlife Refuge (See Figures 2-2 and 2-3).

The proposed BLM exchange lands lie within the northern Rocky Mountain physiographic region. The Upper Blacktail Deer Creek tract is on the southwestern flank of the Snowcrest Range, while the other lands are at the southern end of the Gravelly Range. The Sandhills parcel in the Gravelly Range is adjacent to the Red Rocks Lakes Refuge on one side. Two parcels (Narrows Creek and Elk Mountain A) are bordered by the Beaverhead National Forest on one side. Other state lands border the remaining tracts (Blacktail Creek and Elk Mountain B) on two or three sides.

The West Fork of Blacktail Deer Creek flows through the parcel in that drainage. Narrows Creek, a tributary of Elk Creek, originates on the 40-acre parcel in the southern Gravelly parcels. Limestone Creek, also a small tributary of Elk Creek, enters into the eastern margin of the Elk Mountain A parcel. The other BLM lands occupy ridge or hillslope locations and do not have perennial streams.

The land around the BLM parcels and tracts is generally open rangeland with some wooded land with mixed conifer forests on steep north and northeast exposures. The BLM lands vary in elevation from approximately 6,990 feet along the west fork of Blacktail Deer Creek to over 8,150 feet on Elk Mountain in the southern Gravelly Range.

Ridge top vistas include the Upper Blacktail Deer Creek and Clover Creek Divide, Centennial Valley and Mountains, the southern end of the Madison Range and Lee Metcalf Wilderness, and the Red Rock Lakes Wilderness.

3.1.2 Climate

The climate of southern Beaverhead County is semi-arid and continental, with cold winters and mild summers. Because of the varied locations of the BLM lands, there are substantial variations in temperature and precipitation depending on elevation.

Monthly average temperatures at lower elevations in the area range from about 25 degrees in January to about 70 degrees in July. The average annual temperature at lower elevations is about 47 degrees. Summertime in the area generally is quite mild, with cool nights and moderately warm and sunny days. Hot and humid weather is uncommon. Most of the summer rainfall occurs in showers or thunderstorms, and steady rains may occur during late spring or early summer. Freezing temperatures seldom occur at lower elevations during the summer, but may occur at any time of year at higher elevations.

The average annual precipitation at lower elevations in the area is about 18 inches, but is greater at higher elevations. May and June are the wettest months, averaging about 3.0 inches each, and February is the driest month, averaging about 0.60 inches. Precipitation generally falls as snow during late fall, winter, and early spring, although rain can occur in any month. Late spring, summer, and early fall precipitation is almost always rain, but some hail is observed occasionally during summer thunderstorms.

3.1.3 Groundwater, Geology and Mineral Potential

Proposed BLM exchange lands currently have no groundwater wells located on them. There is a non-functional, windmill-driven, stock watering well approximately 1/4 mile from the southern edge of the Sandhills parcel, located on Red Rock Lakes Wildlife Refuge lands. Some springs and surface water are used for stock watering on the exchange lands with grazing leases.

Groundwater would be expected to be available in limited to plentiful quantities from wells on the BLM exchange lands. Most of the exchange lands are located in mountainous country with narrow stream valleys with little alluvial fill. The one exception is the southern portion of the Sandhills Tract, which is composed of stabilized sand dunes overlying alluvial valley fill, with a relatively shallow ground water depth. Wells in this area might be expected to yield substantial volumes of groundwater because of the porous nature and saturated depth of the alluvial fill.

For the Blacktail Creek tract, the underlying bedrock is undifferentiated Paleozoic rocks ranging from Cambrian-aged rocks on the north of the parcel to Cretaceous shales near the Clover Creek divide south of the parcel. In the parcel itself, there are prominent outcrops of limestone and dolomite. Good quality groundwater could be expected from near surface bedrock sources. The quantity of groundwater would depend on the amount of fracturing and solution cavities in the bedrock which can be highly variable in these rock types. There is more alluvial fill along Blacktail Deer Creek than on drainages on other BLM lands and the alluvial fill could provide some groundwater, although this groundwater is probably dependent on and connected to surface waters in Blacktail Deer Creek.

The northern portion of the Sandhills parcel and the Narrows Creek parcel have Tertiary volcanic rocks as bedrock. Normally they are highly fractured and would yield moderate amounts of groundwater. The Elk Mountain A and B tracts have Precambrian gneiss and schist bedrock occasionally overlain by Tertiary volcanic rocks. Again, groundwater quality would be expected to be good, but quantity would vary with the degree of fracturing, with more highly fractured bedrock yielding higher amounts. Determination of local conditions of groundwater quality and quantity on these selected lands would require subsurface exploration.

The mineral estates will not be exchanged because the state does not own mineral rights on the lands to be exchanged. A recent review revealed no mining claims on the BLM lands. A mineral report completed for the BLM lands to be exchanged determined that there are no minerals of significant value.

3.1.4 Surface Water Rights

There are two recorded water rights on the BLM lands that are being evaluated for this exchange. Both are instream flow rights granted to the Department of Fish, Wildlife and Parks for fish and wildlife use. The first water right is on the West Fork of Blacktail Deer Creek. A place of use clarification indicates the use is from Greys and South Fork (upstream of the Blacktail tract) to the mouth (downstream of the tract). This would indicate that the reach of the creek through the Blacktail tract is included in the water right, which is for 3 cubic feet per second (cfs) year-round.

The second water right is filed on Narrows Creek. Clarification of the place of use indicates that it begins at a spring in Section 18, T13S, R1W, and extends to Elk Lake. Since Narrows Creek enters Section 18 on the BLM 40-acre parcel and it appears to have the only feature even resembling a spring, it is likely that the spring referred to in the clarification is the small riparian zone on the Narrows parcel. This instream flow right is for 1.2 cfs from May 1 to July 15 and for .5 cfs the remainder of the year.

3.1.5 Vegetation

Timber stands west of the stream on the Blacktail Creek tract are dominated by Douglas-fir and represent fairly large blocks of security cover for wildlife. Aspen stands are well distributed through the area, some showing a severe decline in vigor as conifer canopies have increased. Regeneration is barely maintaining most of these aspen stands. A wide diversity of shrubs is present on the tract in riparian areas or as understory in aspen stands (5 species of willow, serviceberry, mountain maple, snowberry, buffaloberry, shrubby cinquefoil). Most of the east half of the tract is dominated by Douglas-fir/limber pine/scree habitat type on a steep southwest slope. Aspen also is widespread in this habitat type although not as distinct clones. The tract contains approximately 1,576 thousand board feet (mbf) of commercial timber.

The Sandhills parcel is vegetated by an old sagebrush/grassland community interspersed with small rock outcrops and intermittent drainages. Historic fires have occurred on and around this tract, increasing the diversity of sagebrush structure and density. There is no riparian habitat on this parcel and no commercial timber.

The Narrows Creek parcel is partially timbered (250 mbf) but is mostly sagebrush/grassland habitat. It contains a steep intermittent drainage (upper Narrows Creek). Herbaceous vegetation is generally mid to late seral with a good species composition. Two small intermittent springs create a small riparian zone, however the lack of water in this immediate area during summer months limits the amount of livestock use when the pasture is grazed.

Elk Mountain A is timbered and steep on the north slope (approximately 80-100 acres with 400 mbf of commercial timber) and provides good security habitat in conjunction with adjacent timbered state lands. The remainder of the parcel is grassland or sagebrush/ grassland habitat.

The Elk Mountain B is sparsely timbered (15 mbf) and consists of sagebrush/grassland habitat which is openly accessible, and provides little summer/fall habitat for wildlife.

3.1.5.1 Rare Plants

No threatened or endangered plants are known to exist on the parcels of BLM lands considered for exchange, although certain habitat conditions are within the range of habitats for rare plants known to have occurred historically or which occur presently elsewhere in the general area. A list of sensitive plant species known or with potential to occur within the study area is included in Table 3-1.

3.1.5.2 Noxious Weeds

No survey of noxious weeds has been performed. There are some weeds along the county road that passes through the Blacktail Creek tract. Weeds, noxious or otherwise, were not observed on the other BLM lands.

3.1.6 Wildlife Habitat and Fisheries

The West Fork of Blacktail Deer Creek (approx. one mile) bisects the Blacktail Creek tract and flows through a large meadow which supports a small beaver complex in the upper half mile. Several small spring-fed wetlands adjoin the stream in the upper meadow. The meadow and wetlands appear largely unaffected by livestock and wildlife use. However, riparian habitat associated with springs on the west side of the tract exhibits excessive trampling by livestock. Side drainages on the tract are intermittent, with no perennial water sources available.

The various habitats described in the vegetation section provide for a wide diversity of wildlife species. Seasonal habitat is present for elk, moose, mule deer, and black bear. This tract represents the lower extent of timber cover in a major wildlife travel corridor between crucial winter ranges in the East Fork of Blacktail Deer Creek and Basin Creek. Some winter elk use is evident but most use occurs in spring and fall. Moose use is primarily during the winter and occurs throughout the tract although concentrating in drainages where shrub canopy is the greatest. Light mule deer use occurs year-round.

Good habitat conditions along the West Fork of Blacktail Deer Creek are enhancing use by a wider diversity of species, and the interspersion of small wetlands along the stream provides for a unusual mix of species. There are few tracts of public land, such as the Blacktail Deer Creek tract, where mallard, green-wing teal, and spotted sandpiper can be routinely seen in association with elk and black bear in adjoining aspen stands, with moose in the surrounding timber. Douglas fir and limber pine in the scree area are providing habitat for cavity-nesting birds. Cursory inventory on August 21, 1996 revealed 10 different neotropical migrant species of birds on the tract, and many more could be anticipated earlier in the breeding season.

The West Fork of Blacktail Deer Creek is a brook trout fishery which receives a moderate level of public use. Heavy sediment loads contributed from upstream bank trampling by livestock and the adjacent county road are limiting productivity.

The Narrows Creek parcel receives light summer/fall use by mule deer and elk, and adjoins a much larger area of quality habitat. This parcel provides high quality habitat for blue grouse. Light winter use by moose is also evident. Two small springs in the Narrows Creek drainage provide a very small area of riparian habitat. These seeps are so small with such limited availability of water that they provide little wildlife habitat during most years. Downstream vegetation is influenced more by seasonal runoff than from perennial flows from these springs.

Antelope, sage grouse, brewers sparrow, and pygmy rabbit are the primary species of concern on the Sandhills parcel. All depend on the structure and diversity of the sagebrush habitat types present. Sage grouse and pygmy rabbit numbers are greatly reduced from historic use levels, and inventory in 1994 and 1995 indicated that habitat on the parcel is currently unoccupied by pygmy rabbits. The unique sandhills habitat on the southern edge of this tract supports a variety of sensitive plants and habitat types. No inventory of plant species occurring onsite has been completed.

The Elk Mountain tracts A and B provide deer and elk winter habitat during mild winter weather. The greatest value to big game on these tracts is in migration corridors between summer and winter habitat areas. These lands provide a variety of seasonal habitats for big game species, upland game birds, and various small mammals and birds. No site specific crucial habitat has been identified for any individual species.

3.1.6.1 Threatened and Endangered Species

None of the BLM lands provide crucial habitat for any threatened or endangered species. The Elk Mountain tracts A and B are within one mile of an occupied bald eagle territory. Occasional foraging use may occur on these areas but eagles are not dependent on these specific lands for survival.

The Sandhills parcel is within two miles of a peregrine falcon hack tower on Red Rock Lakes National Wild-

Table 3-1 Sensitive Plant Species Known or with Potential to Occur within the BLM Exchange Areas (BLM Special Status Species Plant Policy, April 1996; MNHP Database 1996; Lesica and Shelly 1991)

Table 3-1
Sensitive Plant Species
Known or with Potential to Occur within the BLM Exchange Areas
(BLM Special Status Species Plant Policy, April 1996;
MNHP Database 1996; Lesica and Shelly 1991)

Species Common Name	BLM	USFS	Global/ State	Habitat Type	Habitat Present	Flowering/fruiting Pheoology
Astragalus ceramicus var. apus Idaho Painted Milkvetch	S	None	G4T3/ S1	Open very sandy soil in sandhills and adjacent Sagebrush grasslands 6,600 ft	Yes	Late June/July
Carex parryana, ssp. Idahoa Idaho Sedge	S	S	G2Q/ S1	Wet meadows in calcareous parent material 6,500 to 8,500 ft.	No	July/August
Elymus flayescens Yellow wildrye	S	None	G4/S1	Open soil of sandhills and dunes 6,600 ft.	Yes	July
Lesquerella pulchella Beautiful Bladderpod	S	S	G2/S2	Limestone outcrops; Gravelly, shallow substrate over outcrops	Yes	May/June
Oenothera pallida var. Idahoensis Idaho Pale Evening-Primrose	S	None	G5T4Q /S1	Open soil of sandhills and dunes 6,600 ft.	Yes	July
Thelypodium panicalatum Northwestern Thelypody	S	None	G3G4/ SH	Wet, boggy meadows in montane zone 6,700 ft.	No	June

BLM/USFS Key:
S - Sensitive species

Other Codes appended to Global Rank:
Q - Taxonomic question or problems involved, more information needed.
T - Rank for a subspecific taxon appended to global rank for full species; number suffix connotes same as global rank numbers

Global/State Key: G denotes Global rank; S denotes state rank
G2- Imperiled because of rarity (6-20 occurrences), or because of other factors demonstrably making it vulnerable to extinction.
G3 - Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range, or vulnerable to extinction throughout its range because of other factors; in the range of 21 to 100 occurrences.
G4 - Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 - Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
S1 - Critically imperiled in state because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or because of some factor of its biology making it especially vulnerable to extirpation from the state.
S2 - Imperiled in state because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extirpation from the state.
S3 - Rare in state (on the order of 21+ occurrences).
SH - Historically known in state; may be rediscovered.
SU - Possibly in peril in state, but status uncertain; more information needed.

life Refuge. Occasional foraging may occur over this parcel when the tower is occupied, but the area does not provide any crucial habitat for these birds.

The grizzly bear (*Ursus arctos)* is listed as a threatened species and sightings have occurred in the Gravelly Mountains, although none have been specifically on the BLM exchange lands. The BLM exchange tracts are outside the geographic scope of the Grizzly Bear Recovery Zone in the Greater Yellowstone Area. (Recovery zones are defined as areas in which "population and habitat criteria for achievement of recovery will be measured" and which "will be managed primarily for grizzly habitat").[8] Thus, federal policy is that full recovery of grizzly bears is possible without occupance of areas outside these Zones. The exchange tracts are included within an area designated for study as a possible Linkage Zone (in this case, linking the existing Yellowstone Ecosystem Recovery Zone with a not-yet-established population in the southern portion of the Selway-Bitterroot Evaluation Area). Linkage zones are defined by USFWS as "...areas between currently separated populations that provide adequate habitat for low densities of individuals to exist and move between two or more larger areas of suitable habitat".[9]

The wolf (*Canis lupus*) is classified as endangered. Like the grizzly bear, it is a habitat generalist, and will occur almost anywhere that its preferred prey (most often large ungulates) is sufficiently abundant and vulnerable, and that persecution from humans is tolerably low.

Similar to the grizzly bear situation, the BLM lands lie outside the scope of existing wolf recovery areas. Downlisting to "threatened" is envisioned by USFWS when at least two of the three delineated areas (Northwestern Montana, Idaho, Yellowstone area) maintain a minimum of 10 breeding pairs for at least 3 successive years.[10]

The BLM lands are included within the "Nonessential Experimental Population" region for wolves reintroduced into Yellowstone in November, 1994.[11] Also, as in the case of grizzly bears, the general area, including the BLM lands, has been suggested as an "important corridor" between identified wolf recovery areas in Idaho and Yellowstone.[12]

In the case of both the grizzly bear and the wolf a more definitive treatment of habitat needs and potential impacts is contained in the draft environmental impact statement (DEIS) for the Tepee Creek Timber Sale[13], which is in the general area of the Priority 2 lands in Figure 2-3. Relevant portions of that document relating to the grizzly bear and wolf are incorporated by reference into this EA.

3.1.7 Recreation

The Blacktail Deer Creek tract is often used for fishing and hunting. The creek, which parallels a well maintained county road, has a brook trout fishery often used by the general public. However, most of the fishing tends to occur on adjacent private land where the creek meanders through a meadow adjacent to the county road. The tract is currently unmarked as public land, and since some of the stream bottom is fenced into a private meadow, it is not readily obvious that this tract is public land. The tract also receives use for big game hunting in the fall and there are two undeveloped campsites on the tract which receive substantial use by the public during the hunting season.

The remaining BLM lands do not have legal public road access to them and as a result receive very dispersed recreational use mainly for hunting big game. The Sandhills parcel is adjacent to the Red Rock Lakes Wildlife Refuge, including a portion of the refuge that has been designated a wilderness area. The Elk Mountain A and B lands are not immediately adjacent to the refuge, but provide panoramic overviews of the Red Rock Lakes area.

3.1.8 Cultural Resources

A class I cultural inventory (literature search) was completed for the BLM lands per the Programmatic

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[8] U.S. Fish and Wildlife Service, 1993. "Grizzly Bear Recovery Plan (Revision)", 181 p.

[9] U.S. Fish and Wildlife Service, 1993. "Grizzly Bear Recovery Plan (Revision)", p. 24.

[10] U.S. Fish and Wildlife Service, 1987. "Northern Rocky Mountain Wolf Recovery Plan", 119 p.

[11] Till, J., U.S. Fish and Wildlife Service, 1995. Personal Communication cited in Tepee Creek DEIS, 1996.

[12] USDI, 1985. U.S. Fish and Wildlife Service Biological Opinion on the Beaverhead National Forest proposed Forest Plan. Unpublished Report.

[13] DNRC/ Central Land Office, "Draft Environmental Impact Statement- Tepee Creek Timber Sale", March 28, 1996. Pages 33-42 (Affected Environment) and 78-81 (Environmental Consequences).

Agreement among DNRC, BLM, the State Historic Preservation Office and the Advisory Council on Historic Preservation.[14] The Agreement also stipulates that if the use on the lands acquired by the state changes, then a cultural survey which meets federal standards would have to be undertaken. This agreement was signed and became effective in December 1996. The literature search of existing cultural inventory data relative to the BLM lands did not reveal any significant cultural sites on the public lands.

3.1.9 Access

The Blacktail Creek tract is the only BLM tract that has legal public road access. The interagency travel plan currently allows unrestricted off-road vehicular access on BLM lands in this area. Little off-road use is occurring on the Blacktail Creek tract because the terrain is not conducive. A restricted use road crosses state land to the eastern boundary of the Elk Mountain Tract A, but the terrain there is also not suitable for off-road use. The remaining BLM lands are adjacent to other Forest Service and state land and could be legally accessed from those lands by foot or horseback. Essentially, there are no existing public access roads or trails on the BLM lands, other than the county road on the Blacktail Creek tract.

3.1.10 Socioeconomics

3.1.10.1 Timber and Grazing Revenue

The Blacktail Creek tract, Elk Mountain A and B tracts, and the Narrows Creek parcel all have commercial timber on them, along with meadows and interspersed timber and grass that provide grazing opportunities. The remainder of the lands have a sagebrush\grass vegetative type well suited to grazing. To date, BLM has not harvested trees from any of the timbered lands nor are there any immediate plans to initiate commercial harvests. BLM management of its lands in this area focuses more on recreational enjoyment than on commercial timber value. However, all BLM lands have been leased for livestock grazing purposes. Commercial timber volume estimates for those BLM lands that have timber are listed in the section on vegetation. Table 3-2 lists the AUM's (or animal unit months) and the lessees for each tract, along with an estimate of revenues produced by the BLM grazing permits.

3.1.10.2 Payment in Lieu of Taxes

BLM is required by 31 USCA § 6902 to continue to make Payment in Lieu of Taxes (PILT) payments to local governments for the BLM lands that will be transferred to state ownership, as long as the lands remain in state ownership. Should any of the lands acquired eventually be traded or sold to private entities, then the lands would be taxed by local governments like any other private lands.

More than six percent of Beaverhead County is in state land (about 332,650 acres). Beaverhead county is therefore eligible for state equalization payments, which are payments the state makes in-lieu of taxes on state lands. In 1996, the county was paid $46,485 in equalization payments. If all of the BLM lands under consideration in this exchange were acquired by the state, the increase in equalization payments would amount to approximately $250. This would represent a net gain to Beaverhead County because it would still receive PILT payments for those same lands. However, the state equalization appropriation is a fixed amount and a $250 gain by Beaverhead County would be offset with variable small losses equal to the $250 increase, deducted from other eligible counties receiving equalization payments.

3.1.10.3 Land Values

The BLM lands are relatively large, generally isolated, and partially timbered. This combination of characteristics, in association with the southwestern Montana locale makes them potentially valuable when compared to other similar lands in the same region that have sold to buyers interested in recreation and quiet enjoyment on their lands. Of the five parcels and tracts being considered for exchange, only one (Blacktail Creek) has a legal public access road to it, and as a result the land value is higher than on the other parcels. The potential value is slightly discounted on the other parcels because of lack of vehicular access. In any case, the land values are relatively high when compared to the state lands being exchanged on the Crow Reservation. All indications are that values will continue to escalate in this region faster than similar appreciation of values will occur on the Crow Reservation. Table 3-3 lists the values from the appraisal. Comparing the cumulative value of each BLM property taken in order of priority for acquisition by the state, the state would acquire the Blacktail Creek, Narrows Creek, and Elk

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[14] Copies of the Programmatic Agreement can be reviewed in Helena at the DNRC office and the State Historic Preservation Office, and at the BLM offices in Dillon and Billings.

Table 3-2 *Grazing Lease Revenue on BLM Lands*

Tract	Grazing Lessee	AUM's	Revenue[15]
Blacktail Creek	Keith Anderson	128	$172.80
Sandhills Tract	Centennial Livestock	164	$221.40
Narrows Creek	Turner Enterprises	15	$20.25
Elk Mtn. Tracts A and B	Alaska Basin Grazing Assn.	220	$297.00
Total		**527**	**$711.45**

Table 3-3 *Appraised Value of BLM Parcels Evaluated in Crow Exchange*

Parcel	Land Value	Cumulative Value[16]	State Land Value
Blacktail Creek	$431,920.00	$431,920.00	
Narrows Creek	$276,642.00	$708,562.00	
Elk Mtn. Tract A	$21,840.00	$730,402.00	
Elk Mtn. Tract B	$109,933.00	$840,335.00	$821,400.00
Sandhills Tract	$241,803.00	$1,082,138.00	
Totals	$1,082,138.00	$1,082,138.00	$821,400.00

Mountain A and B tracts to approximately equal the value of state land on the Crow Reservation.

3.1.11 Hydrologic and Soil Resources

Table 3-4 lists the approximate mileage of perennial and intermittent streams on the BLM lands that are being evaluated for exchange. Of these, only Blacktail Deer Creek is large enough to have any significant riparian habitat and support a fishery (see Wildlife and Fisheries section).

With the exception of a narrow strip of alluvial (water deposited) soils bounded by the floodplain of Blacktail Deer Creek and eolian (wind deposited) soils associated with stabilized sand dunes in the southern portion of the Sandhills Tract, soils generally have developed in situ over the underlying geologic materials.

3.2 State Lands

3.2.1 General Geography, Topography and Aesthetics

The state lands involved in this first exchange are scattered over the Crow Reservation in south central Montana. The area is part of the Rocky Mountain Foreland[17], a transitional zone between the true plains and the Rocky Mountains. The Crow Reservation

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[15] Revenue is estimated from a 1998 BLM grazing lease rate of $1.35/AUM. This rate, like the rate used by the state, is based on a formula that factors in the market price for cattle. However, the BLM rate is at the minimum rate prescribed by regulation and cannot go any lower.

[16] The cumulative value can be compared to the total land value of the state lands on the Crow Reservation to determine approximately the point at which successive addition of BLM lands will provide equivalent value to the state lands (shown as $821,400.00 in the right column). BLM lands are listed in DNRC's priority for acquisition.

[17] Rocky Mountain Foreland is an environmental region more fully described in the First Annual Report, Montana Environmental Quality Council, 1972.

Table 3-4 Streams on BLM Tracts Included in the CBSA Land Exchange (with approximate lengths)

Table 3-4
Streams on BLM Tracts Included in the CBSA Land Exchange
(with approximate lengths)

Tract	Stream Segment	Approx. Length(mi.)
Blacktail Creek	West Fork Blacktail Deer Creek	1
Blacktail Creek	West Fork Blacktail Deer Creek intermittent unnamed tributaries	1.25
Sandhills Tract	Tepee Creek intermittent unnamed tributaries	1.5
Narrows Creek	Narrows Creek (intermittent)	0.25
Elk Mtn. Tract A	Limestone Creek	0.33
Elk Mtn. Tract A	Elk Creek intermittent unnamed tributary	0.33
Elk Mtn. Tract B	Rock Creek intermittent unnamed tributary	0.5

offers a wide variety of geographic and topographic settings, ranging from alpine (over 9,000 ft.) in the Bighorn Mountains to riparian floodplains (2,800-3,000 ft.) along the Bighorn and Little Bighorn rivers. Generally the state lands that are proposed for exchange (See Table 2-1) lie between these two extremes in foothills and along intermittent drainages. Most consist of grassland or grassland/sagebrush tracts that are used as part of a larger dryland grazing complex. None of the parcels are completely fenced, although some are partially fenced.

With the exception of the Woody Mountain parcel, most areas of the state lands are in gently rolling hills with sometimes deeply incised drainages or gullies. The Woody Mountain parcel lies across the top of a mesa-like feature along Wild Horse Ridge with steep, badlands topography extending down from the top of the parcel. Many parcels have the only developed water in the area, while others depend on water developments on adjacent lands to be effectively used for grazing. Views from each parcel are generally expansive, but typical of grazing lands on the Reservation and in southeastern Montana.

3.2.2 Climate

The Crow Reservation has a continental climate with cold winters and warm to hot summers. In Hardin, the July average daily maximum temperate is 90° F., with an average minimum of 55° F. In January the average maximum and minimum temperatures are 32° F and 6° F. Precipitation varies with elevation from around 10 inches per year along the Big Horn River between St. Xavier and Hardin, to over 30 inches in the Pryor and Bighorn Mountains. All of the state lands involved with the exchange are in a zone of 15-20 inches of annual precipitation, with just over half that coming in the growing season months of April through July.

3.2.3 Groundwater, Geology and Mineral Potential

The reservation includes parts of the folded Middle Rocky Mountains, represented by the Bighorn and Pryor Mountains, but most of the reservation lies along and the western margin of the Powder River Basin. The high topography in the southwestern part of the reservation is due to the uplift and folding of the Bighorn and Pryor mountains, which include primarily Paleozoic rocks, such as the distinctive limestones of the Madison Group which form the sides of Bighorn Canyon. The Wolf and Rosebud Mountains along the eastern side of the reservation result from the eroded, upturned margins of younger, Paleocene strata that extends eastward into the Powder River Basin. The Ft. Union Formation, known for its coal beds and the predominant Paleocene geological formation, has outcrops of the Tullock, Lebo, and Tongue River members (sub-units) present along the eastern side of the reservation. Between these higher zones are lower areas, dominated by late Cretaceous shales, known locally as the Colorado and Cody shales. These units are dominated by thick, dark grey shales with some sandstone units and localized bentonite beds. Terraces and floodplain deposits exist along the Bighorn and Little Bighorn Rivers and along some of the perennial streams like Pryor Creek and Lodgegrass Creek.

The Pryor Creek, Woody Creek, Woody Mountain, Muddy Creek, and Rotten Grass Creek parcels are underlain by the dark grey shales of the Colorado Group. Dry Creek, Little Bighorn, Custer Creek, and Tullock Creek parcels are located on the Cody shale, also known as the Montana Group. The Davis Creek parcel is located on the Tongue River member of the Ft. Union formation.

Groundwater potential is closely tied to the geology of the Crow Reservation. The only areas where relatively high volumes of good quality water are available are in the alluvium along the major rivers and streams. None of the state lands are particularly conducive to the production of either large quantities or good quality groundwater. However, small amounts of water of good enough quality for stock watering purposes have been obtained from some of the sandstone units in the Colorado and Cody shales. Similar results of limited quantities of water can be expected from the sandstone units of the Ft. Union Formation. There is a record of

Table 3-5 Water Rights on State Lands Involved in the First Crow Boundary Settlement Act Exchange

Table 3-5
Water Rights on State Lands
Involved in the First Crow Boundary Settlement Act Exchange

Legal Description	Property Identity/ Water Right No.	Use	Source
T5S, R26E, S 16, SE¼NE¼ and SE¼	Pryor Creek 43E-W-137367-00	Instream Stockwater	UT[18] Lost Creek
T3S, R28E, S 36, NE¼SE¼	Woody Mountain	None	None
T3S, R29E, S 10 and 11, All	Woody Creek 43P-W-137393-00	Instream Stockwater	Woody Creek
T5S, R30E, S 03, Lots 1-4, S½N½ and S½	Muddy Creek 43P-W-042630-00 43P-W-137374-00	Stockwater Reservoir and Instream Use	UT Muddy Creek and Muddy Creek
T6S, R33E, S 12, NE¼	Rotten Grass Creek	None	None
T1S, R35E, S 16 All	Dry Creek	None	None
T2S, R35E, S 16 All	Little Bighorn 43O-W-042633-00 43O-W-042634-00	Stockwater Reservoir and Well[19]	UT of Little Bighorn
T3S, R35E, S 16 All	Custer Creek	None	None
T2S, R36E, S 16 All	Tullock Creek	None	None
T4S, R37E, S 01 S½N½ and S½	Davis Creek 42A-W-025014-00	Stockwater Reservoir	North Fork of Davis Creek

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[18] UT denotes "unnamed tributary of".

[19] The well located in the NWSESW of the section is no longer in use, but the water right does not appear to be abandoned.

one well on the Little Bighorn parcel, but it is not in use and appears to be abandoned.

The mineral potential of the state land is tied also to the underlying geology. Coal exists under most of the eastern side of the reservation, particularly in the Tongue River member of the Ft. Union Formation. Oil and gas could exist virtually anywhere on the reservation and several active oil fields produce in the Ash Creek, Soap Creek, Lodgegrass, and Grey Blanket Creek areas. Sand and gravel is available in the alluvium along the streams and rivers. Some geologic units have medium to high potential for bentonite, gypsum, clinker (fire baked shale from burnt coal beds) and limestone. The state has no subsurface ownership on any of the reservation parcels, so it is not giving up any potential mineral values, nor is it gaining any in this exchange.

3.2.4 Surface Water Rights

Table 3-5 identifies water rights on the 11 state properties within the Crow Reservation that are involved in this first exchange. Five of the 11 parcels have no water rights recorded on them. Four other parcels have water rights for instream stock water use and one of these tracts additionally has a reservoir stock water right. Of the remaining two parcels, both have stock water reservoirs and one also has a stock water well that is no longer in use.

The traditional pattern of grazing on the Crow Reservation involves pasture units much larger than the state parcels, usually comprised of a mix of fee lands, state, tribal, and other leases and often controlled by one lessee. Because loss of a state preference right may occur with the proposed exchanges, circumstances may arise where the water right on a state parcel can be critical to the use of not only the state lease, but also of the surrounding non-state grazing leases. The same is true when a state parcel does not have water, but depends on a water source on a nearby lease for full use. A description of the circumstances involving the importance of water to each lease follows.

The Pryor Creek parcel has an intermittent drainage that passes into the northeast corner of the property. Springs farther up the drainage on the adjacent tribal lease to the east supply water down the drainage into the state land until late spring or early summer in most years. The current lessee has used a backhoe to deepen the drainage to try to intercept more water, but still has water only into early summer. The state parcel is fenced on three sides, but not to the east, so stock can leave the parcel and reach water at the springs usually until late fall when they freeze over. Without access to water, this lease would be unusable for grazing.

The Woody Mountain parcel is isolated high on a ridge about two miles from the nearest water source. It receives almost no grazing use due to the distance to water and the rugged terrain.

The Woody Creek tract is unfenced and is in the midst of dryland grain fields on adjacent lands. The tract is used for winter grazing because of the protection afforded by the Woody Creek bottom and because cattle would graze in the grain fields if left in the area through the summer. Although there are water rights for instream use in Woody Creek, there is probably little or no water in the creek during the winter unless occasional warming causes snow cover to thaw and create runoff. Two reservoirs in close proximity immediately south of Section 10 and north of Section 11 provide for grazing on this tract.

The Muddy Creek parcel has a stock water reservoir that leaks badly and does not provide reliable water throughout the grazing season. The parcel includes about 100 yards of Muddy Creek in its southeast corner, but Muddy Creek is intermittent and a fence inside the parcel excludes cattle from this source. There was some water in the reservoir in mid-July, 1996, immediately after a severe hail storm in the area, but the lessee said the water would remain only a short time before the reservoir would be dry again. There is a small stock water reservoir about 1/2 mile north of the parcel.

The Rotten Grass Creek parcel is completely unfenced and has no water on it. It receives heavy grazing use because of a large stock water reservoir immediately to the east of the parcel and because of open range access to Rotten Grass Creek 1/2 mile to the west.

The Dry Creek parcel has no water on it but uses a spring fed stock reservoir immediately adjacent to the eastern boundary. It is used mostly for winter range because the springs allow access to water all winter and its proximity to a paved road allows for supplemental winter feeding of hay.

The Little Bighorn parcel has a stock water reservoir developed in bentonite beds along an unnamed tributary of the Little Bighorn River. The reservoir drys up in dry years and leaves a dangerous expanse of mud as it goes dry. The lessee lost 16 cows in the mud one year and has since developed a well, storage tank, and gravity feed stock water tank system on adjacent lands to minimize use of this reservoir. A well developed in similar bentonite beds in another fork of the same drainage appears to be abandoned.

The Custer Creek parcel has no water rights on it, but it appears that construction crews created a small impoundment for holding construction (road watering) water during construction of Highway 212. That impoundment goes dry each summer, but does provide some water on the north half of the parcel early in the grazing season. A well, storage tank, and watering tank system is also developed on an adjacent parcel and provides water for stock using this lease. Two stock water ponds are within a mile to the south of the section.

There is no water on the Tullock Creek section, but a well and spring are shown in the drainage about 1/4 mile to the south. There are no fences on this section to keep cattle from using the nearest water.

The Davis Creek parcel has a good stock water reservoir that holds water year around in the southeast corner, which is the only developed water for either this parcel or nearby lands. There are no fences between the state and non-state parcels.

3.2.5 Vegetation

The Montana Vegetation Types map[20] lists five vegetation types on the Crow Reservation. Lodgepole pine-Douglas fir forest occurs in the Bighorn Mountains and in the foothills north of the Pryor Mountains. Eastern Montana ponderosa pine forest occurs in the Wolf Mountains and on a small portion of the Crow Reservation immediately southeast of Billings. Ponderosa pine savannah occurs in the northeastern edge of the reservation.

All of the lands involved in the first exchange fall into one of the last two vegetation types on the reservation. The Central Grassland vegetation type occurs in the vicinity of Hardin and extends about 20 miles east and west and about 15 miles up the Bighorn and Little Bighorn drainages. The Foothill Grassland type covers the rest of the reservation. Tables 3-6 and 3-7 show the parcels that fall in each vegetative type and the species that typically occur.

3.2.5.1 Rare Plants

Rare plants have not been identified on any of the state tracts that are proposed for exchange. The tracts may, in some cases, provide habitat conditions that would be suited to some of the rare plants that occur or which have historically occurred in the area. Table 3-8 lists those rare plants known to have occurred, along with some of their habitat characteristics. Of those species listed, only two have known or historic occurrences within 10 miles of state tracts that are evaluated for

Table 3-6 Central Grassland Vegetative Type Characteristics (Species in bold type are distinguishing species)

Table 3-6
Central Grassland Vegetative Type Characteristics
(Species in bold type are distinguishing species)

Parcels	Grasses	Forbs	Brush	Trees
Dry Creek Little Bighorn Custer Creek Tullock Creek	Blue Grama Western Wheatgrass Needle-and-thread Sandberg Bluegrass Green Needlegrass Bluebunch Wheatgrass Plains Reedgrass Prairie Junegrass Plains Muhly Threadleaf Sedge Needleleaf Sedge	Fringed Sagewort Broom Snakeweed Phlox Wild Buckwheat Scarlet Globemallow	**Sagebrush** Plains Pricklypear	Absent or Occasional

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[20] Payne, G.F., 1973 Vegetative Rangeland Types in Montana, Montana Agricultural Experiment Station, Montana State University, Bozeman.

Table 3-7 Foothill Grassland Vegetative Type Characteristics (Species in bold type are distinguishing species)

Table 3-7
Foothill Grassland Vegetative Type Characteristics
(Species in bold type are distinguishing species)

Parcels	Grasses	Forbs	Brush	Trees
Pryor Creek Woody Mountain Woody Creek Muddy Creek Rotten Grass Creek Davis Creek	**Bluebunch Wheatgrass** **Western Wheatgrass** **Idaho Fescue** **Sheep Fescue** Needle-and-thread Mountain Brome Pumpelly Brome Thickspike Wheatgrass Bluegrass Sandberg Bluegrass Prairie Junegrass Green Needlegrass Blue Grama	Western Yarrow Clubmoss Lupine Phlox	Douglas Hawthorne Saskatoon Serviceberry Western Chokecherry Russet Buffaloberry Rose	Quaking Aspen

this exchange. Joe-Pye Weed (*Eupatorium maculatum var. Bruneri*) occurs along the riparian zone of Pryor Creek which passes within three miles of the Pryor Creek tract. Sweetwater Milkvetch (*Astragalus aretioides*) occurs on limestone outcrops near Bighorn Canyon within 8 miles of the Muddy Creek parcel.

3.2.5.2 Noxious Weeds

Noxious weeds are usually exotic plants that proliferate and reduce the value of land for agriculture, forestry, livestock, wildlife, and other beneficial uses. Noxious weeds spread rapidly, out-compete most native species and have at least some of the following characteristics:

1. Continuous seed production during the growing season
2. Highly efficient seed dispersal
3. Persistent banks of seeds or seedlings
4. Capability for growth in adverse climates and soils
5. Capability to reproduce through seeds, sprouts, and rhizomes
6. Few natural controls [21] [22]

On the Crow Reservation, several noxious weeds are known to be established. Spotted knapweed is typically initially spread along travel corridors and occurs as isolated infestations along Interstate 90 near Hardin and the Wyoming border; near Fort Smith; along the Edgar-Pryor road; and along Highway 212 near the eastern boundary of the reservation. Leafy spurge occurs west and southwest of Pryor, near the western edge of the reservation, and in the Lodgegrass and Wyola areas. Resource specialists with the Tribe have indicated that Russian knapweed, dalmation toadflax, sulfur cinquefoil, hounds tongue, Canada thistle, hoary cress, common burdock and field bindweed occur either on or adjacent to some of the state exchange tracts.

Some state tracts also have weed infestations related to seed dispersal from hay due to winter feeding (Woody Creek and Dry Creek); grazing pressure (horseweed appears to be flourishing where grazing pressure is heavy in the vicinity of a stock water reservoir adjacent to the Rotten Grass Creek parcel); or simply because of favorable habitat conditions (slimflower scurfpea occurs in the higher areas of the Muddy Creek parcel).

3.2.6 Wildlife Habitat and Fisheries

With its varied topography, the Crow Reservation provides a wide variety of habitat for a number of species. There are 64 small mammal species known to exist on the reservation. Ten large mammals, including mountain lion, black bear, elk, white-tailed deer, mule deer, and moose also live on the reservation. There are seasonally as many as 261 different bird species. Five amphibians and 15 reptiles are known to occur on the reservation.[23]

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[21] Montana Department of Agriculture, 1981, Weed Training Manual, Helena, MT.
[22] McDonald, P. and C. Tappeiner, 1986. "Weeds", Journal of Forestry, 84(10):34-37.
[23] Crow Tribe Resource Development Technical Reports. Oct. 1977, Wildlife, prepared by Rocky Mountain Research Corporation, p 5-1 to 5-34.

Table 3-8 Endangered, Threatened, and Sensitive Plant Species Known or with Potential to Occur within Yellowstone and Bighorn Counties (MNHP Database 1996; Lesica and Shelly 1991)

Table 3-8
Endangered, Threatened, and Sensitive Plant Species Known or with Potential to Occur in Yellowstone and Bighorn Counties (MNHP Database 1996; Lesica and Shelly 1991)

Species Common Name	USFWS	USFS/ BLM	Global/ State	Habitat Type	Habitat Present on State leases	Flowering/fruiting Phenology
Astragalus aretioides Sweetwater Milkvetch	None	None W	G4/S2	Limestone soils on exposed ridges 4,000-7,800 ft.	No	June/July
Astragalus barrii Barr's Milkvetch	None	S W	G3/S3	Gullied limestone knolls 3,000-4,000 ft.	No	June/July.
Astragalus grayi Gray's Milkvetch	None	None None	G4/S1	Sandy Clay dry sagebrush steppe 3,700-5,500 ft.	Unknown	June
Carex gravida var Gravida Pregnant Sedge	None	None W	G5/S1	Moist, riparian and deciduous forest soils 3,900-4,000 ft.	No	July
Centaurium exaltatum Westen Centuary	None	None	G5/SH	Moist alkaline soils around streams and ponds on the plains	Unknown	August
Cleome lutea Yellow Bee Plant	None	None W	G5/S1	Open sandy soils of sagebrush steppe 4,000-4,600 ft.	Unknown	June/July
Coniaselinum scopulorum Hemlock Parsley	None	None W	G4/S1	Riparian forests and moist valley meadows 3,700 ft.	No	July
Dalea enneandra Nine-anther Dalea	None	None W	G5/S1	Gravelly, grassland slopes on the plains 2,100-3,100 ft.	No	July-Sept.
Eleocharis rostellata Beaked Spikerush	None	None W	G5/S2	Wet, often organic soils around springs 2,700-6,100 ft.	Unknown	Unknown
Erigeron bellidiastrum Western Fleabane	None	None None	G5/SU	No habitat data available	Unknown	Unknown
Eupatorium maculatum var Bruneri Joe-pye Weed	None	None W	G5TU/ S1	Moist meadows, riparian forest openings 3,700 4,200 ft.	No	July/August
Gratiola ebracteata Bractless Hedge-Hyssop	None	None None	G4/S1	Muddy soil of pond margins 3,200-5,200 ft.	Unknown	June-August
Grayia spinosa Spiny Hopsage	None	None W	G5/S1	Dry, sandy, often calcareous soil on shrub steppe 4,200-5,000 ft.	No	May/June
Lomatium nuttallii Nuttall Desert--Parsley	None	None W	G3/S1	No habitat information available	Unknown	Unknown
Mentzelia nuda Bractless Mentzelia	None	W W	G5/S1	Sparsely vegetated, gravelly soil on slopes 2,100-2,500 ft.	No	Unknown
Physalis hederifolia var Comata Prairie Ground Cherry	None	None None	G5/SU	No habitat information available	Unknown	Unknown
Physaria didymocarpa var Lanata Wooley Twinpod	None	None None	G5/SU	No habitat information available	Unknown	Unknown
Potentilla plattensis Platte Cinquefoil	None	None W	G4/S1	Grasslands and sagebrush steppe 6,000-8,000 ft.	No	June
Rorippa calycina Persistentsepal Yellowcress	None	W W	G3/S1	Wet sand, mud along ponds, rivers in the plains 2,000-2,500 ft.	No	May-July
Stipa lettermanii Letterman's Neddlegrass	None	None None	G5/S1	No habitat information available	Unknown	Unknown
Sullivantia hapemanii Wyoming Sullivantia	None	None W	G3/S1	Wet, open, steep calcareous slopes 3,700-4,600 ft.	No	June/July
Viburnum lentago Nannyberry	None	None None	G5/S1	Riparian forests, aspen groves on valleys and plains 1,900-4,400 ft.	No	June

USFS Key:
W - Watch species
S - Sensitive species

Other Codes appended to Global Rank:
Q - Taxonomic question or problems involved, more information needed.
T - Rank for a subspecific taxon appended to global rank for full species.

Global/State Key: G denotes Global rank; S denotes state rank
G2 - Imperiled because of rarity (6-20 occurrences), or because of other factors demonstrably making it vulnerable to extinction.
G3 - Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range, or vulnerable to extinction throughout its range because of other factors; in the range of 21 to 100 occurrences.
G4 - Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 - Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
S1 - Critically imperiled in state because of extreme rarity (5 or fewer occurrences, or very few remaining individuals), or

The state lands on the reservation provide excellent habitat for antelope and mule deer and for some upland game birds. Some of the stock water ponds provide seasonal waterfowl habitat. Generally, these habitats are under used by game species because of year-round hunting by tribal members, combined with no bag limits, and relatively easy 4-wheel-drive access.

There are excellent fisheries in the Bighorn River, and fair to good fisheries in the Little Bighorn and other perennial streams. None of the state lands have perennial streams and no fisheries are known to exist in the stock water ponds that exist on state parcels.

3.2.6.1 Threatened and Endangered Species

The Crow reservation provides historic habitat for grizzly bear, wolf, and black-footed ferret, although none of these species presently exist there. Occasional bald eagle and peregrine falcon use occurs on the reservation, but none of the state lands involved in the exchange have been linked to this occasional use.

There are no known occurrences of threatened or endangered species on any of the state lands involved in this exchange proposal. None of the lands involved have any habitat critical to any threatened or endangered species. One species of special concern, the spotted bat (*Euderma maculatum*) occurs in the Bighorn Canyon vicinity, which is within six miles of the Muddy Creek parcel. Habits of spotted bats are not well known, but they may forage for food as far away as the Muddy Creek area.

3.2.7 Recreation

Due to lack of access (See Access), there is little, if any, recreational use of these state lands. There may be some use of the lands by tribal members for hunting or other purposes. The Custer Creek parcel is accessible, but it also appears to have little recreational use.

3.2.8 Cultural Resources

A class I survey (literature review) of the state lands reveals no recorded historical or archaeological sites on any of the properties. Under the Programmatic Agreement for Cultural Resources, a professional cultural inventory will only be necessary if the agency ultimately receiving the title to the parcels proposes a land use change that would endanger potential cultural resources.

3.2.9 Access

The state lands on the Crow Reservation do not have legal public access, with the exception of the Custer Creek parcel, which has Highway 212 passing through it. The Woody Creek tract has an all-weather private road passing through Section 11. It is not known if any prescriptive public access has been established on the private road. The parcels and tracts are all surrounded by either tribal lease lands or individual tribal allotments. Tribal members may have access to the state lands across the tribal lease lands, but they are not legally accessible to the general public.

3.2.10 Socioeconomics

3.2.10.1 Timber and Grazing Revenue

There are no commercial timberlands on the state lands involved with this exchange. Grazing revenues are the only source of income from these state lands at this time. Table 3-9 summarizes the revenue producing status of the state lands in 1998. Overall, on a dollars/acre/year basis, these lands will produce $.97 per acre in 1998, or $5,203.98. This is about in line with other state lands off the reservation, but is substantially less than the market for private grazing, which may go as high as $5.00 per acre (about $20.00/AUM).[24]

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[24] Information provided by the BIA and Crow Tribe indicates that, depending on competition for leases, tribal lease rates may vary from $1.00 to as high as $10.00 per acre (or about $4.00 to $40.00/AUM). These extremes are relatively infrequent and $5.00 per acre was considered more indicative of the actual market for both tribal and private leases.

Table 3-9 Existing State Revenues from State Lands Proposed for Exchange (in Dollars)

Table 3-9
Existing State Revenues from State Lands Proposed for Exchange
(in Dollars)

Location / Parcel Size	**State Revenue Sources**					**Revenue Recipients**	**$/Acre/ Year**
	Grazing[25]	Outfitting	Agriculture	Cabin Site	Total Revenue	Common School Trust	
Muddy Creek 635.92 acres	$561.40				$561.40	$561.40	$0.88
Pryor Creek 200 acres[26]	$720.00				$720.00	$720.00	$3.60
Woody Creek 640 acres	$376.94				$376.94	$376.94	$0.59
Woody Creek 640 acres	$421.05				$421.05	$421.05	$0.66
Woody Mountain 40 acres	$40.10				$40.10	$40.10	$1.00
Rotten Grass Creek 160 acres	$148.37				$148.37	$148.37	$0.93
Dry Creek 640 acres	$593.48				$593.48	$593.48	$0.93
Little Bighorn 640 acres	$549.37				$549.37	$549.37	$0.86
Tullock Creek 640 acres	$649.62				$649.62	$649.62	$1.02
Custer Creek[27] 640 acres	$594.28				$594.28	$594.28	$0.93
Davis Creek 480 acres	$549.37				$549.37	$549.37	$1.14
Total State Parcels	$5,203.98				$5,203.98	$5,203.98	$0.97

Source: Summary of Rentals from Marylee Norris, DNRC, October 16, 1996 (Updated Sept. 1998)

Revenues from grazing and timber harvested from common school trust lands are considered "distributable revenues." That is, 95 percent of these receipts flow directly to the state general fund where they are distributed through the school equalization account for the maintenance of the common schools. The remaining 5 percent is deposited into the permanent school trust. Figure 3-1 shows how these revenues are allocated. Revenue produced from the lands acquired in the exchange must be equal or greater than the revenue produced from the exchanged lands in order for the Land Board to approve the exchange.

3.2.10.2 Payment in Lieu of Taxes

Since Yellowstone and Big Horn counties do not have more than six percent state ownership, they receive no equalization payments from the state. This exchange will not change that status.

Equalization payments made by the state are similar in concept to the Payment in Lieu of Taxes (PILT) payment that the federal government makes to counties with federal ownerships, but no payment is made unless the state land base exceeds six percent of the total land base of a county. The final result of the land exchange will be the transfer of title of the state lands

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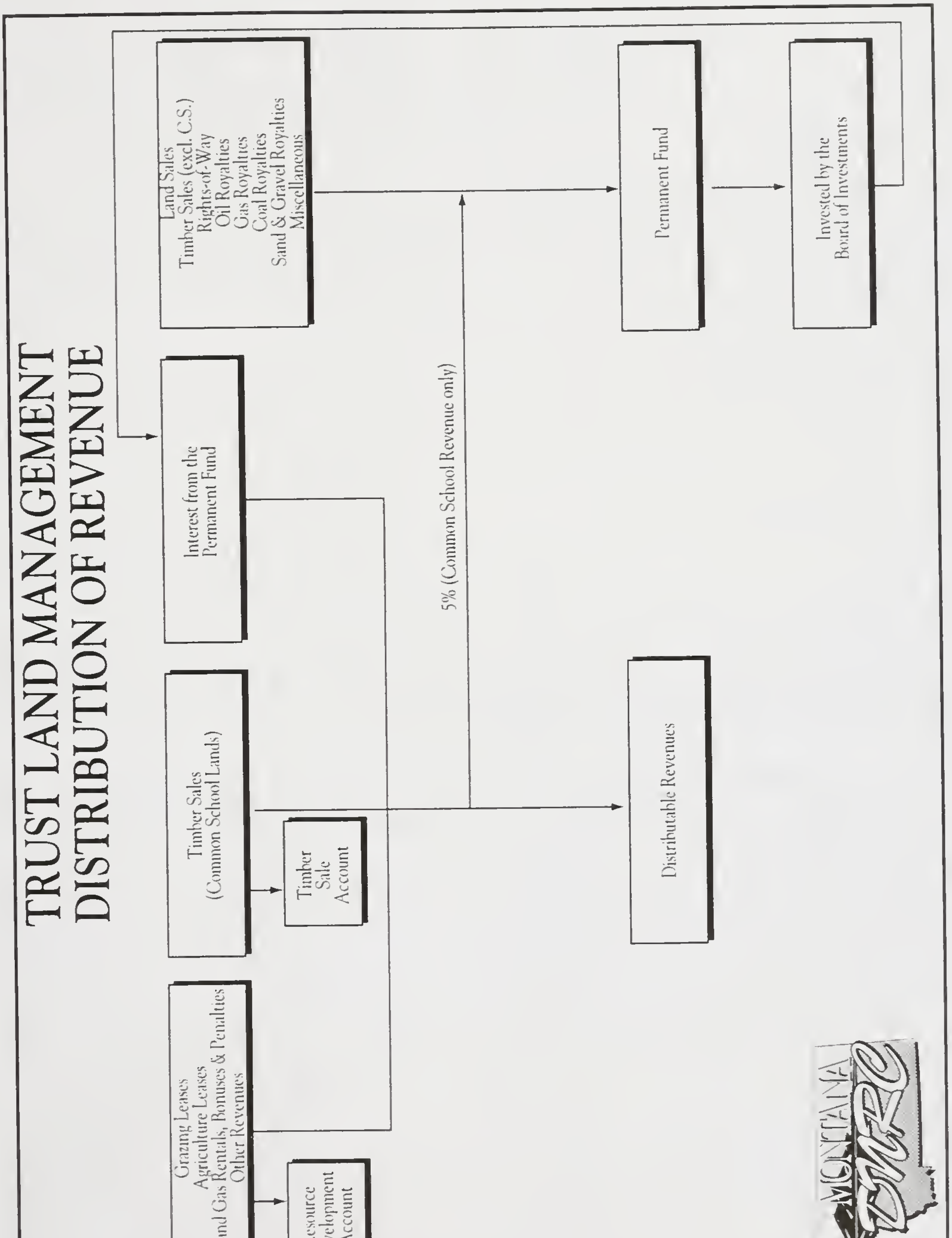
[25] Based on a DNRC rate of $4.01/AUM for 1998 except as otherwise noted.
[26] Based on 60 AUM's at $12.00/AUM.
[27] Based on a DNRC rate of $3.58/AUM for lease issued before July 1, 1993

Figure 3-1 Trust Lands Revenue Flow Chart



to the federal government to be held in trust by the Bureau of Indian Affairs for the Crow Tribe. Since the federal government does not make PILT payments for Indian trust lands, there will be no net change in funding of local governments as a result of this exchange.

3.2.10.3 Land Values

The appraisal of state lands on the Crow Reservation shows their highest and best use continuing as grazing lands. The total value of the lands, as established by a comparative sales appraisal, is $821,400.00. In addition, improvements on these lands were valued separately because of the necessity of compensating the current lessee for authorized improvements as a condition of the exchange. Improvements on these lands totaled $18,475.00. Table 3-10 shows the values for the parcels on the Crow Reservation at the time of appraisal.

3.2.11 Hydrologic and Soil Resources

All of the streams on the state parcels are intermittent and are usually dry most, if not all, of the year. Table 3-11 summarizes the drainages and the stream miles on the state parcels. There are four small stock water reservoirs on the Muddy Creek, Little Bighorn, Custer Creek and Davis Creek parcels which may provide some aquatic habitat for waterfowl, frogs, turtles, and aquatic insects. Most of these reservoirs evaporate in dry years, so no fisheries are supported. Intense local thunderstorms during summer and "chinook" winds that rapidly melt snow cover in winter can lead to runoff events in these intermittent drainages. Major runoff can be accompanied by severe erosion and gullying, particularly on the state lands where they are underlain by erodible Colorado and Cody shales. Some parcels have "badlands" developing where poor soils, little vegetation, and infrequent, high intensity runoff occurs.

There are 119 separate mapped units of 58 different soil types on the 11 state parcels and tracts. All of the soils on the state tracts have developed in place or "*in situ*" on the underlying geologic formations. The high percentage of silt and clay content in these shales tends to yield soils that are clayey to loamy and which have good water holding capacity when deep. High clay content inhibits the rapid infiltration of water, so short duration precipitation events tend to only wet the surface layer and not penetrate to any depth. This makes driving access on unimproved roads nearly

Table 3-10 Appraised Value of State Parcels on the Crow Reservation

Table 3-10
Appraised Value of State Parcels on the Crow Reservation

Parcel	Land Value	Improvements	Total
Pryor Creek	$30,000.00	$3,675.00	$33,675.00
Woody Creek #1[28]	$102,400.00	$0.00	$102,400.00
Woody Creek #2	$108,800.00	$0.00	$108,800.00
Woody Mountain	$5,000.00	$0.00	$5,000.00
Muddy Creek	$89,000.00	$3,600.00	$92,600.00
Rotten Grass Creek	$24,000.00	$0.00	$24,000.00
Dry Creek	$96,000.00	$0.00	$96,000.00
Little Bighorn	$102,400.00	$6,400.00	$108,800.00
Tullock Creek	$96,000.00	$0.00	$96,000.00
Custer Creek	$91,000.00	$0.00	$91,000.00
Davis Creek	$76,800.00	$4,800.00	$81,600.00
Totals	$821,400.00	$18,475.00	$839,875.00

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[28] The two adjacent 640 acre parcels that are jointly known as the Woody Creek tract were appraised individually. Thus, on this table, Section 10 is designated as Woody Creek #1 and Section 11 is shown as Woody Creek #2. The two parcels together constitute the Woody Creek tract described elsewhere in this EA.

Table 3-11 Streams Included in the CBSA Land Exchange (with approximate lengths)

Table 3-11
Streams Included in the CBSA Land Exchange
(with approximate lengths)

Parcel/Tract	Stream Name -Crow Reservation (Intermittent Only)	Approximate Stream Length (miles)
Pryor Creek	Pryor Creek unnamed tributary	0.25
Woody Creek	Woody Creek	2.5
Woody Creek	Woody Creek (tributaries)	1
Muddy Creek	Muddy Creek	0.1
Muddy Creek	Muddy Creek (tributaries)	1.25
Rotten Grass Creek	Rotten Grass Creek unnamed tributary	0.5
Dry Creek	Dry Creek	1
Dry Creek	Dry Creek (tributaries)	1.5
Little Bighorn	Little Bighorn unnamed tributary	1.5
Custer Creek	Custer Creek unnamed tributary	1
Custer Creek	Medicine Tail unnamed tributary	0.5
Davis Creek	North Fork Davis Creek unnamed tributary	0.5

impossible when soils are wet and also is responsible for runoff and gullying. Soils developed over the more sandy units tend to have loamy characteristics, take on water faster and dry out faster and are not as prone to gully and badlands formation. Nearly all of the soils on the state lands are more conducive to grazing, so none of the soils have been cultivated, although dryland grain crops could be raised on small portions of some parcels if it were economical to do so.

4.0 CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

The impact analysis of the Proposed Action starts from the premise that the proposed exchange will occur between public agencies and that the impacts of the exchange will stem solely from differing management policies or proposed changes in the basic land use that would occur if the exchange were consummated. In the case of a proposal for changing the land use of a parcel, that action would be subject to additional review beyond the scope of this EA and a separate or tiered EA would have to be completed before that action could take place. In addition, the Programmatic Agreement on Cultural Resources would require a cultural survey which meets federal standards when a land use change is proposed. Both of these processes will provide additional checks and opportunities for public comment which could modify any future proposed action. Therefore, this EA will not attempt to describe impacts for future actions which cannot be fully anticipated at this time.

Analysis of the No Action alternative will look at the consequences of not exchanging lands as proposed. The Mitigated Exchange alternative will look at various options available to the Land Board and BLM to complete the exchange but still mitigate some of the impacts to the various affected parties and/or resources.

4.1 Impacts of the Proposed Action

4.1.1 General Geography, Topography and Aesthetics

The proposed action will have no effect on the general geographic setting of any of the BLM parcels, with the possible exception that future timber sales and harvest may change the viewshed by the addition of roads or by a short-term reduction in timber volume and by changes in the age class distribution of timber. The effects of any proposed timber sale would have to be addressed in a separate environmental assessment.

No impacts are anticipated to the geography, topography or aesthetics of the state lands on the Crow Reservation as a result of this exchange.

4.1.2 Climate

There are no anticipated impacts either from or to the climate as a result of the proposed exchange.

4.1.3 Groundwater, Geology and Mineral Potential

There are no anticipated impacts on the BLM parcels to groundwater, geology, or to present or future mineral potential as a result of the proposed exchange. Because BLM will retain sub-surface ownership, it is possible that unanticipated future mineral development might preclude surface uses by the state. Should oil and gas development be proposed upon these lands, the state will be given notice pursuant to the Surface Owner Damage and Disruption Compensation Act, §§ 82-10-501, et. seq., MCA. Should hard rock mineral development be proposed upon these lands by any means other than hand tools, the state will be given notice pursuant to the Landowner Notification Act, §§82-2-301, et. seq., MCA.

There would be no impacts to the state lands associated with the exchange, as long as the primary use of the lands continues to be livestock grazing. Prior to the 1920 Crow Allotment Act, the state lands were tribal trust lands and subsurface ownership was retained by the Department of Interior, in trust for the Crow Tribe, when the state was granted lands on the Crow Reservation. If mineral development should occur in the future, there could be impacts to the surface uses and to resources like groundwater. None of these potential uses can be anticipated at this time and future environmental assessment would be required if such development were to be proposed.

4.1.4 Surface Water Rights

No impacts to water rights would be associated with this transfer on the BLM tracts. The water reservations held by the Department of Fish, Wildlife and Parks will not be affected by the exchange.

For stock water rights, where the place of use and point of diversion are the same place (for example, a stock water pond on state land on the Crow Reservation) the water right associated with that use is appurtenant to the land. This means that the water rights developed on state lands in this exchange will transfer with the parcels to the United States to be held in trust for the Crow Tribe. In most cases, the development of that water right was done by the lessee of the state parcel. The water right becomes an improvement on the property for use and enjoyment by the lessee, but does not become the lessee's water right. The improvement (stock water dam) may be compensable by the party that ultimately reaps the future benefit of that improvement, which in the case of this exchange, would be the Crow Tribe. State law provides: "If any state land is exchanged on which there are improvements belonging to a lessee and some person other than the lessee is the transferee, that person shall settle with the lessee for all improvements on the land belonging to the lessee before the exchange is completed."[29] Appraisals of the state lands have valued improvements such as stock ponds separately from the land value, because it cannot be assured that current lessees will continue to have full use and benefit of these improvements, in which case, lessees will have to be compensated. The value of the improvements will become the basis for compensation to the current lessee for any improvements that are appurtenant to the land. In this example, the Crow Tribe would be responsible for compensation to current lessees for improvements.

Current lessees may be impacted by the loss of the state lease, because the water on the state parcel may provide stock water for a much larger area than just the state lease. If the lessees lose access to the water, then their livestock operation may be impacted beyond the loss of the lease and the water improvements on it. They may be forced to haul water, develop new water sources (if that is possible), or may have to abandon the use of adjacent lands because of lack of stock water.

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[29] MCA §77-2-206. Settlement for improvements.

On the other hand, state lands that depend on off-site water developments may impact future tribal lessees in the same way if no access to the water is developed off the state parcel following the exchange.

4.1.5 Vegetation

The primary impact that could be anticipated following the exchange is related to future timber harvest. As mentioned earlier, BLM has no immediate plans to initiate timber harvest on the lands involved in this exchange. However, timber harvest on the acquired BLM lands will be necessary at some future date in order to provide the state with revenue equal or greater than provided by the state lands being offered in exchange. Timber harvest will remove some of the older trees and thus will change the nature and extent of the forested areas. This change occurs abruptly with timber harvest, then, over time, transitions back to something similar to pre-harvest conditions. Although the direct impact on vegetation is not particularly significant, timber harvest will likely have related impacts to access, wildlife and fisheries, socioeconomics, and hydrology and soils. Any proposed future timber sale would have to be addressed in a separate environmental assessment specifically for that proposed action.

There are no planned changes in the use of the present state lands for grazing following the proposed exchange. The only potential impacts to vegetation on the state tracts resulting from the exchange would result from different grazing policies or enforcement of policies that allowed changes in the current stocking levels of livestock. This could result in either more or less grazing than at present. More use could result in overgrazing, which would lead to increased erosion, and might alter species composition on the tracts, including introduction and spread of weeds. Less use, over time, might also result in a species composition shift towards native species in proportions closer to what existed before livestock grazing was introduced.

The vagueness of grazing policies and enforcement practices for both the state and tribal trust leases make any prediction of future impacts purely hypothetical. It is assumed that the state and the Tribe have vested interests in the long-term productivity of these lands. Therefore, stocking levels will probably remain similar following the exchange and impacts, if any, will be negligible.

4.1.5.1 Rare Plants

Since no rare plants have been identified on the BLM or the state lands, there will be no impacts to rare plants as a result of the exchange.

4.1.5.2 Noxious Weeds

Because of the tendency of certain noxious weeds to spread along travel routes, there is a potential for spread of weeds in the BLM parcels if additional road development occurs in association with future timber sales. This tendency will be mitigated by closure of such roads to motorized vehicle use. As noted before, any future timber sales would require analysis through an environmental assessment directed towards a specific proposed timber sale. Specific requirements regarding reseeding and reclaiming roads and controlling on-site weeds are usually incorporated into the timber sale contract.

There were no noxious weeds observed during a cursory inspection of the state parcels. However, to the extent that new roads, wheel tracks, or other vehicular access routes are required to implement the exchange (such as alternate access routes because of loss of access on a state parcel), these routes will become potential invasion routes for noxious weeds that tend to spread along travel routes (spotted knapweed, Canada thistle, etc.). Under current circumstances, where state parcels are leased for grazing, the grazing lessee is responsible for weed control.

4.1.6 Wildlife Habitat and Fisheries

BLM's Blacktail Creek tract has state land on three sides of it. It is assumed management of the tract after the exchange would be similar to current management for the adjacent state land.

The state recently sold timber on its adjacent lands and it is likely that if the exchange were completed, timber harvest would also occur on the Blacktail Creek tract in about 15-20 years. Such an action would have to be addressed in a separate environmental assessment. There would be both detrimental and beneficial impacts from timber harvest on this tract. Even though this EA cannot address specific impacts of a future timber sale, the following discussion addresses some of the general impacts that might result from timber harvest.

Timber harvest on this tract could have short-term adverse impacts to big game security habitat. In the worst case, removal of conifer canopy could inhibit big game winter use and might increase vulnerability during migrations, particularly during hunting season. The impacts and their severity would depend on the amount of timber harvested, the method of harvest, the amount of new roads and whether they are subsequently closed or remain open, and many other factors that cannot be known and will not be addressed unless the exchange actually occurs and a timber sale is proposed.

Deferring or even stopping the harvest of timber could not guarantee that these impacts would not occur. Nearly all of the limber pine in these mixed stands is dead or dying and creates a substantial fuel load that could result in loss of the entire timber resource to fire in any dry year. Timber harvest can have the benefit of reducing fuel loading, stimulating new growth that provides future secure areas and creating, in a controlled way, habitat improvements that provide better forage in a way that emulates the effects of fire. Timber harvest would provide more grass and shrub forage and might increase the grazing capacity of the parcel until new timber growth again shades the understory and restricts grass and shrub growth. If excessive grazing were prevented, reopening some timber stands could rejuvenate decadent aspen stands which also provide important wildlife habitat.

Any increase in grazing intensity or duration that concentrates use in the riparian areas could degrade the condition of this reach on the West Fork of Blacktail Deer Creek. Livestock use in adjoining riparian habitat is already incompatible with maintaining or restoring riparian function. Increasing grazing opportunity away from the stream bottom riparian habitat and increasing accessibility could work to disperse current impact and improve the present condition of this reach of the creek. Increased dispersal of grazing might cause impacts to wildlife use.

Wildlife habitat will continue to be good to excellent on the state parcels on the Crow reservation, but because of hunting policies, ease of access, and lack of escape cover, the parcels will continue to be under used by species heavily hunted by tribal members.

4.1.6.1 Threatened and Endangered Species

No threatened or endangered species live on or depend on either the BLM or the state lands. No impacts will accrue to any threatened or endangered species as a result of the exchange.

4.1.7 Recreation

Recreational opportunities on the BLM lands to be exchanged would remain essentially the same as under BLM management. The only difference will be that a State Lands Recreational Use Permit would be required for recreational pursuits that were open to the public at no cost under BLM management. The cost of a permit is $10/year/person for all individuals between 18 and 59 years of age. Persons between 12 and 17 or over 60 can get a permit for $5. Children under 12 do not need a permit and a family permit (up to 6 members of the same household) costs $20.

BLM lands currently are open to recreational off-road vehicle (ORV) use, while such use is restricted to designated roadways or travel routes on state lands. Due mostly to limited access and steep terrain, there is little, if any, ORV use currently occurring on the BLM parcels. This is also discussed in section 4.1.9 Access.

On the Crow Reservation only the Custer Creek parcel was legally accessible to the public for recreational use. Since non-Indians are not allowed to hunt big game on the reservation, the Custer Creek parcel receives very little recreational use and that will probably not change as a result of the exchange. The state has the right to require non-Indian recreationists to hold a recreational use license when pursuing recreational activities on state school trust lands, even though they are within the bounds of a reservation. That requirement probably extends to tribal members also, but the issue becomes clouded and practically unenforceable when tribal treaty rights to hunt and fish on the reservation are taken into account. As a practical matter, because it sometimes is difficult to ascertain if someone is a tribal member or not, it is difficult to enforce the recreational use permit on the reservation. Exchanging these lands may result in fewer persons in this area purchasing state land recreational use licenses, but that impact is probably negligible in terms of the total number of licenses sold in the state.

Acquisition of the BLM lands with better access and more opportunity to hunt, fish, hike, birdwatch, etc. by the general public may, in fact, increase the sales of recreational licenses and enhance the overall opportunity to provide recreation to the general public. Enforcement will be easier because the BLM lands acquired will be within larger blocks of state land that are already being checked and because there will be no jurisdictional and enforcement ambiguities similar to those occurring on the Crow Reservation.

4.1.8 Cultural Resources

There will be no impact to cultural resources as a result of the exchange. The state will have the same obligation as the BLM has to survey, record, and protect, if necessary, any cultural resources threatened by a proposed land use change. The Bureau of Indian Affairs will have the same responsibility for lands that ultimately become part of the tribal trust lands.

4.1.9 Access

There are no existing roads or trails that provide legal public access to the BLM lands, except for the county road crossing the Blacktail Creek tract. This county road will be reserved in the patent to the state. Other "two track" trails existing on the remaining BLM land do not have legal public access across adjacent private or state land. Consequently, a reservation will not be provided for them in a patent to the state because this might encourage trespass on the adjacent state and private crossed by these trails. This is an ongoing problem on the Interagency Travel Map, where public routes have been designated across a tract of federal or state land, but there is no legal public access connecting to that designated public route. This situation has caused confusion and contributed to trespass problems.

Consequently, "two track" roads and trails on the BLM lands which do not currently have legal public access to them (Narrows Creek, Sandhills, Elk Mountain A and B) will not be reserved in a patent to the state. With the exchange, these lands will become a part of a larger block of state lands and the state will have the prerogative to address travel management and public access needs for the entire block of state lands without a predetermination by the BLM. The Department of Natural Resources and Conservation (DNRC) is responsible for managing school trust lands and participating with other state and federal agencies to periodically review and update the Interagency Travel Map to account for ownership changes and to assess changing resource and access needs. This ongoing review will allow DNRC to address public access needs on the acquired parcels in concert with adjoining state lands.

Road construction due to future timber sales on the BLM lands would increase accessibility into areas presently secure from livestock or vehicular disturbance. This is particularly true of the Blacktail Creek parcel where county road access goes through the middle of the parcel. Travel management on state sections is currently more restrictive than on BLM lands and it is unlikely that roads for the purposes of timber harvest would be left open or result in greater vehicular access than at present. However, walk-in access would be enhanced along these roadways.

Only one of the 11 state parcels on the Crow Reservation has legal public road access (Highway 212 runs through the Custer Creek parcel). Access to all of the other state lands requires crossing tribal trust lands or individual tribal allotments. As the state lands become tribal trust lands through exchange, the Custer Creek parcel will not be accessible to the public, except along the Highway 212 easement. Access will generally be restricted for non-Indians, except to the extent that the lessees or the public might have access to the Custer Creek and other state parcels through permission, by easement, or by other established use rights.

Some of the other state lands have more primitive access routes (wheel tracks, bladed access roads, etc.) that cross the tracts and provide access to other areas of the lessee's ranch operations. This is particularly true of the Woody Creek tract where a private road crossing the parcel provides access between a residence to the south and Highway 87 to the north, which runs between Billings and Hardin. Similar but less critical access routes cross the Muddy Creek and Davis Creek parcels. There is some potential that access previously enjoyed by a lessee on a state lease may be lost as a result of the exchange. If this access is critical and must be maintained by some other means, there is the possibility of additional primitive road development on adjacent lands.

4.1.10 Socioeconomics

4.1.10.1 Grazing

The impact of the exchange will be to convert BLM grazing leases to DNRC grazing leases on the BLM land that will become state land. The state will recognize any existing BLM lessee as the current lessee, entitled to a preference right under state grazing rules, so there will not be any displacement of BLM lessees as a result of the exchange. The state does have a higher lease rate than the BLM (currently $4.01/AUM for the state compared to $1.35/AUM for the BLM) and this means that the cost of the lease will be higher under state ownership. Table 4-1 provides an overview of potential revenues from the BLM lands under state ownership for grazing and other sources.

The revenue from grazing on the BLM parcels is based on applying the DNRC minimum grazing rate to the AUM stocking rate used by the BLM in their current lease arrangements. Because the DNRC and BLM use different criteria for determining carrying capacity, the number of AUM's could change after the exchange. Thus, the monetary value of the grazing should only be considered an estimate. Grazing might increase for some period following timber harvest on the timbered portions of the BLM parcels, but for purposes of this environmental assessment it is assumed that stocking levels would remain at pre-harvest levels to avoid damaging regeneration growth following harvest.

From Table 3-3, it is assumed that the state would have to acquire the Blacktail, Narrows, Elk Mountain A, and Elk Mountain B tracts and parcels to equal the value of the state lands on the Crow Reservation

Table 4-1 Potential State Revenues from BLM Lands Proposed for Exchange Beaverhead County

Table 4-1
Potential State Revenues from BLM Lands Proposed for Exchange
Beaverhead County

Parcel/Acres	Outfitting[30]	Grazing[31]	Timber		Revenue Total	
			Net Present Value[32]	Annual Value[33]	Total Annually	$/Acre/Year
Blacktail Creek 680 acres	$68.00	$513.28	$153,478.00	$6,165.00	$6,746.28	$9.92
Narrows Creek 40 acres	$4.00	$60.15	$12,665.00	$509.00	$573.15	$14.33
Elk Mountain A 489.82 acres	$48.00	$621.55	$37,300.00	$1,501.00	$2,170.55	$4.43
Elk Mountain B 201.48 acres	$20.15	$260.65	$1,008.00	$40.00	$320.80	$1.59
Sandhills 440 acres	$44.00	$657.54	N/A	N/A	$657.54	$1.59
TOTALS	$184.15	$2,113.27	$204,451.00	$8,215.00	$10,512.42	Avg. = $5.68

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[30] This assumes that each of the parcels acquired would generate a minimum of the greater of $.10/acre or $100 from outfitters licenses. For this example, it is assumed that large blocks of lands would be obtained by outfitters and these parcels would be charged at the $.10/acre as part of a large block of land. Some lands may be worth much more than $.10/acre while others may not have any market for outfitting. No outfitters are currently licensed to use the state lands adjacent to the BLM parcels. The value per acre can be reduced by $.10 in the right column if outfitting is not assumed to be a reasonable potential income on each parcel.

[31] Grazing revenue is based on estimated BLM AUM's X $4.01 minimum rate/AUM for 1998 state grazing leases.

[32] Net Present Value analysis was done by Will Wood, DNRC forest economist. The analysis assumes six entries at 25-year intervals, with each entry harvesting 33 percent of the standing volume. An average growth rate of 1.115 percent is assumed and future revenue is discounted to the present using a 4 percent real rate. The analysis also assumes initial entry into the Blacktail Creek tract in 15 years, the Narrows Creek tract in 20 years, the Elk Mountain tract A in five years, and tract B in 20 years. Volumes and stumpage values are based on timber cruises by BLM in 1996.

[33] Annual value of the timber represents that income necessary to equal the net present value and thus is a value that represents the theoretical annual benefit from the timber. It is not an annual income figure, but more of an average yearly income over a longer period of time where infrequent, large incomes from timber sales are averaged with years of no income.

($821,400.00). From these BLM lands the state would expect to receive approximately $2,113 per year in grazing revenues after the exchange. Grazing revenue alone would not be enough to justify an exchange, since the state receives more than that amount annually from the state lands on the Crow Reservation. The state received $5,203.98 in 1998 for the grazing leases on state lands involved in this exchange (Table 3-9).

Although the state lands are designated common school trust lands, the revenues from grazing and other annually collected lease payments do not flow to the trust, but to the general fund, where they are distributed to the school equalization account. The state will be required to receive at least an equivalent amount of benefit annually from lands it acquires in order for the exchange to be considered under the Land Board Exchange Policy, which incorporates constitutional and statutory restrictions on exchanges. Thus, some timber harvest would have to occur to justify the proposed exchange.

The state's minimum lease rate for grazing is established by a formula influenced by the price of cattle in the state. Ten of the 11 state parcels lease at the minimum rate which is about three times higher than the BLM lease rate, but is perhaps only 1/3 (or less) of the rate charged by the Tribe. The Tribe charges by the acre instead of by AUM's (animal unit months) and those charges range from a minimum of $2.00 up to $5.00 per acre for grazing. The lands typically require about four acres per AUM, so the tribal rate may be as high as $8.00 to $20.00 an AUM. Since many private grazing lands also lease within this range, the market rate on the reservation appears to be considerably higher than the state rate. Exchanging these lands will eventually convert the state lands to tribal trust lands and this will have two impacts. It will affect the existing preference right granted to the state lessee and it will increase the lease rate.

Leases on tribal trust lands are granted only to tribal members, unless no interest is expressed by any members. If that occurs, then non-Indians may compete for the lease. Leases generally run for five years and no preference right is given the current lessee. The preference right granted to current state lessees allows them to meet a higher competitive bid at the end of their lease term and thus retain the lease interest on a continuous basis. This allows the lessee to plan his operations, including the state lease, with a reasonable expectation of stability over time and allows the lessee to borrow money to operate or make improvements based on the holding of the state lease. The exchange may exclude the present lessee if a Tribal member acquires the lease. If the current lessee retains the lease, it will be without a preference right, and thus will not allow long range planning based on the expectation of continuing the lease.

Lease rates for tribal trust lands are different for tribal members than for non-Indians. Often, since non-Indians are excluded from the initial bidding, the lease goes to a tribal member at a rate not much different from the state rate. In many cases, as a profitable business venture, the tribal lessee will sub-lease the parcel to a non-Indian at a rate that approaches the market rate. Thus, the current state lessee may have an opportunity to lease the parcel if there are no tribal bidders or through a sub-lease arrangement, but at a cost two to five times higher than the state lease rate. The degree to which this cost differential may impact current lessees depends on how dependent they are on state leases. Where the operation is small and the state lease is a significant percentage of the total grazing land, the financial impact will be greater.

Although the financial impact may be an imposition to the current lessee, it is apparent that state lease rates on the reservation are generally below the rate for private grazing. Thus, the impact can also be viewed as a removal of a benefit, that is not available to those without state leases, and a transfer of that benefit (because of the Tribe's differential between Indian and non-Indian lease rates) to a successful Indian bidder. From the viewpoint of the successful bidder and the Crow Tribe this would be seen as a beneficial impact of the exchange.

Finally, an impact associated with the loss of preference and potential loss of grazing privileges is the question of dealing with this change in an area typically referred to as "open range." A change of lessee has impacts beyond the loss of grazing or the increased price of grazing because it raises the question of the cost and burden of fencing and the economic consequences of not fencing. Most current lessees have developed a vested interest not only in the state lease but in the lands surrounding the state parcel. They try to have exclusive use of the range for a period of time so as to avoid intermixing cattle from other herds. This is partly because of the extra work involved in separating herds, but more importantly, it allows serious ranchers to maintain a breeding program that allows herd improvement over time and produces calves that can bring a better price. Loss of preference on a small parcel of land in a pasture otherwise controlled by a single grazing operation can have serious impact on the ability to exclusively use a pasture. The impact is even more serious if the lessee has developed water on the state parcel for use in the larger pasture, and then loses use of the state parcel. Fencing is generally seen as a poor solution because of the limited distribution of water and the inability to enforce gate closures. It is important to note that most state lessees have, in association with the state leases, additional leases or subleases from the Crow Tribe or individual tribal members. Thus, state lessees have had to deal with and accommodate these impacts under presently existing conditions in order to achieve exclusive pasture use.

Tribal Resolution 75-22 places the duty, burden and cost of fencing on the non-Indian, if a fence is required to separate exclusive grazing use.[34] The same resolution then grants co-ownership of the fence to both the Indian and the non-Indian. In some cases, this greatly compounds the impact to the current lessee, because they not only lose the use of the state parcel for their operation, but must bear the entire cost of a fence to prevent further impact and then lose partial ownership over the fence, making it difficult to prosecute damage claims over cut wires, gates left open, etc.

For example, the Woody Creek tract (1,280 acres) is only grazed in the fall and winter because the lessee raises small grains on the surrounding lands and only allows the cattle into the grain fields after harvest. Cattle would graze in the growing grain fields if they were allowed on the state leases during the growing season. Loss of the lease would take 1,280 acres out of the grazing base of about 9,000 acres available (14 percent), but would also cost the lessee the price of six miles of fence (about $18,000) if someone else were to bring cattle into the center of their grain operation.

4.1.10.2 Timber

Revenue from timber sales on common school lands, since 1992, has gone directly into the school equalization account and is generally spent in the year it is earned (See Figure 3-1). Table 4-1 shows the projected annual value of the timber from each of the BLM parcels with timber. This annual value is essentially the amount of money that would have to be invested annually to equal the net present value of the timber, under the assumptions listed in the footnotes. Although this is not an annual income that can be compared directly to the income from grazing, the timber annual value provides an average value resulting from infrequent, but relatively large, timber revenues with intervening years of no income from timber. When combined with grazing and other potential revenues, it can be seen that over the long-term, the revenue from these lands will exceed the grazing revenue from the state lands on the reservation.

The final column in Table 4-1 and in Table 3-9, presented earlier, shows the relative value of the lands in terms of the amount of revenue produced per acre, per year. The state lands on the reservation average $.97/acre/year, while the BLM lands that would be acquired average $5.68/acre/year. The Blacktail Creek parcel, the state's first priority to acquire in the exchange has an estimated potential of $9.92/acre/year, or $9.82/acre/year if the income from outfitting does not materialize in the future (the state charges a minimum of $.10/acre for an outfitter lease on state lands).

There is no merchantable timber on the state lands on the Crow Reservation, so no revenue will be generated by timber sales from these lands either before or after an exchange.

4.1.11 Hydrologic and Soil Resources

Some soil disturbance and hydrologic impact will be associated with any roads built to access other state lands or to harvest timber. Timber harvest will, in itself, create changes in the hydrologic regime by generally increasing the amount of precipitation that reaches the ground surface, increasing the rate of spring snow melt, and decreasing the evapotranspiration within the harvested area. These changes occur rapidly following harvest, but dynamically change as regrowth occurs and are difficult to predict. These impacts may or may not be significant and would have to be addressed in a separate environmental assessment if timber harvest were subsequently proposed.

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[34] Tribal Resolution 75-22 has not been tested in court involving the Crow Tribe's attempt to enforce this ordinance. A recent Bureau of Indian Affairs attempt to enforce the resolution was overturned on appeal by the Indian Board of Appeals.

Soils could become prone to excessive erosion if overgrazing were to occur as a result of the exchange. However, the state does not routinely allow overgrazing and degradation of the grazing or soil resource. On state lands on the Crow Reservation, there does not appear to be any significant difference in grazing practices or stocking levels between present state and tribal leases and overgrazing leading to soil erosion is not anticipated. This is also true when comparing BLM lands with adjacent state parcels, even though each agency uses a different method to arrive at stocking levels.

4.2 Impact of No Action

The No Action alternative assumes that the proposed exchange of lands is not approved and does not take place. It basically maintains the status quo with regard to state land ownership, management policy, and revenues. The alternative does have some consequences because BLM would remain under statutory obligation to exchange 46,625 acres of BLM land for private land to make up for not exchanging BLM land for state land (See discussion under 2.2 Alternatives). BLM is still required to complete an environmental assessment for impacts associated with private exchanges and the scope of that assessment will increase without state exchanges. The biggest impact of no action is that lands now in BLM ownership would be converted to private ownership. Conversion of BLM land to private land could reduce public lands in Montana with attendant impacts on access and recreational use, unless the BLM land has no access. The BLM private exchange program will place additional private lands on the tax rolls in counties where these exchanges occur and private individuals will enjoy the benefits of private ownership, although private ownership may be more costly for uses, such as grazing and weed treatment, than a BLM lease.

4.2.1 General Geography, Topography and Aesthetics

No impacts are anticipated to the geography, topography or aesthetics of the BLM or state lands under the No Action alternative. It is unlikely that BLM will initiate timber sales on any of the isolated BLM tracts involved if they remain under BLM ownership, so visual impacts associated with timber sales or roads would not occur.

4.2.2 Climate

Climate will neither affect or be affected by the No Action alternative.

4.2.3 Groundwater, Geology and Mineral Potential

The No Action alternative would have no effect on groundwater or geology. BLM would maintain both surface and sub-surface estates for the lands they presently hold. The state would continue to hold only the surface estate for the Crow Reservation state parcels.

4.2.4 Surface Water Rights

There would be no effect on the DFWP water reservations on the BLM parcels. Current state lessees that enjoy water developments on the state parcels would continue to have the use of those water developments for stock water use.

4.2.5 Vegetation

There would be no impacts to vegetation from timber sales on the BLM parcels, although road use permits might have to be secured from the BLM to gain access to state timber adjacent to the Blacktail Creek parcel. Livestock use probably would continue at present levels with present impacts on both BLM and state lands under the No Action alternative.

4.2.5.1 Rare Plants

No rare plants have been identified on any parcels, so it is assumed that there would be no impacts to rare plants under the No Action alternative, unless the BLM private exchange program were to involve lands with rare plants.

4.2.5.2 Noxious Weeds

Under No Action BLM and the state would continue to be responsible for weed identification and control on the lands each agency administers.

4.2.6 Wildlife Habitat and Fisheries

Wildlife habitat generally would be unaffected by the No Action alternative. As with the Proposed Action, the state is in the process of harvesting timber on lands adjacent to the Blacktail Creek tract, regardless of the outcome of the exchange. At this time, harvest on adjacent state lands would be done by helicopter with only a small area of BLM land adjacent to the county road being impacted as a loading site. No roads or other impacts are anticipated under No Action on the BLM land. A separate environmental assessment previously completed for the timber sale has addressed the impacts of the timber sale on wildlife.

4.2.6.1 Threatened and Endangered Species

There would be no impact to any Threatened or Endangered species under the No Action alternative, unless consequent private exchanges by BLM involve lands that are inhabited by such critical species.

4.2.7 Recreation

BLM lands would continue to have recreational use similar to that which currently exists. State lands would continue to be under used because of lack of access and restrictions prohibiting big game hunting by non-Indians on the Crow Reservation.

4.2.8 Cultural Resources

No impacts are expected under the No Action alternative. Both BLM and the state would continue to be responsible for protection of cultural resources on their respective lands.

4.2.9 Access

Access would not change under the No Action alternative. BLM parcels would continue to be administered under BLM's access policy which basically allows off-road vehicle access.

4.2.10 Socioeconomics

4.2.10.1 Timber and Grazing Revenue

It is unlikely that any timber harvest would be done under this alternative on any of the BLM or state lands. Grazing revenues for the state and BLM would continue from existing lessees. Existing state grazing lessees would continue to have preference and would continue to use water developments on the state parcels.

The Crow Tribe would not acquire the state parcels under this alternative and tribal members would not have the opportunity to compete for state leases until current lease terms expire. Even then, the preference right holder would be given the opportunity to meet the high bid and retain the grazing lease. Tribal members would not benefit unless they currently hold state leases.

BLM would have to actively work with the Crow Tribe through BLM's private exchange program to find private landowners willing to acquire or exchange for BLM lands off of the reservation to meet the mandate of the Crow Boundary Settlement Act. The Act requires BLM to provide land to the Crow Tribe equivalent in value to the state land on the reservation (approximately 46,625 acres).

4.2.10.2 Payment in Lieu of Taxes

The counties would continue to receive PILT as it has in the past under the No Action alternative.

4.2.11 Hydrologic and Soil Resources

There would be no foreseeable change in the Hydrologic and Soil resources under the No Action alternative, except that some soil disturbance and slight hydrologic impact might be associated with a road easement or right of way granted to the state to gain access to lands adjacent to the Blacktail Creek tract.

4.3 Impact of the Mitigated Exchange Alternative

This alternative will be referred to in the text as the Mitigated Exchange alternative and will evaluate various actions that the Land Board might take to mitigate or reduce specific impacts on ranching operations for current state lessees. Key words that are highlighted in bold text in this paragraph will be used to differentiate these mitigation options. These include the potential consideration of **delayed implementation** until the end of the current lease term to allow more time for a lessee to adjust operations; granting **access easements** to lessees before the exchange to ensure future access to other lands and making exchanges contingent on an equitable **cost sharing** between parties if the exchange requires fencing (tribal resolution requires the non-Indian to fence to keep livestock from trespass on a tribal lease).

Another mitigated exchange that could be suggested and evaluated, but not enforced without Crow tribal concurrence, would be the granting of **continued lessee preference** for a transitional period of time. The lessee would have to pay more for the grazing lease, but would have some additional time to resolve problems that loss of the lease would cause. Finally, **private exchanges**[35] could be considered in conjunction with an exchange between the BLM and the state. In cases where loss of a particular state lease could irreparably harm a ranching operation, the state could consider exchanging fee lands of equal value for state lands. In a three way exchange, the private lands acquired by the state would be offered for exchange with the BLM to fulfill the requirements of the Crow Boundary Settlement Act. Concurrence by the Crow Tribe would be necessary, since any private land exchanged to the state would ultimately become tribal trust lands in the state to BLM exchange.

The Crow Tribe did not see the necessity for private exchanges in this initial exchange, since all state lands are surrounded by Tribal lands. Thus no private exchanges are proposed for this Phase 1 exchange and they are not evaluated in the Mitigated Exchange Alternative.

These same mitigation options are not necessary to evaluate for the BLM lands because lessee preference, access, and cost sharing are not an issue with the BLM lessees if the exchange occurs. For example, BLM lessees will be granted a state preference right as the lessee of record, BLM will reserve an easement for existing public access roads and trails in the patent granted to the state, and the tribal resolution regarding fencing will not be in effect off of the Crow reservation. If delayed implementation is used as a mitigation on the state lands, it will also delay implementation on the BLM lands, even though lessees have already been given a required two-year notification for cancellation of their BLM leases.

4.3.1 General Geography, Topography and Aesthetics

The Mitigated Exchange alternative would have the same effect as the Proposed Action , which is basically no effect except for potential viewshed changes if timber harvesting and road construction occur after the exchange. Delayed implementation would delay the onset of this impact.

4.3.2 Climate

The Mitigated Exchange alternative would have no effect on climate.

4.3.3 Groundwater, Geology and Mineral Potential

Impacts will be the same under the Mitigated Exchange alternative as will occur under the Proposed Action.

4.3.4 Surface Water Rights

Delayed implementation or continued lessee preference would allow more time for lessees to develop alternative water supplies (new stock water ponds, wells and distribution tanks, hauled water dispensing tanks, etc.) where they may be losing access and rights to use of water developed on state lands. Tribal lessees may also need to develop water on state sections that are currently without water before they are useable as grazing tracts, if they become separately fenced.

4.3.5 Vegetation

The Mitigated Exchange alternative would have no impact on vegetation, except that delayed implementation or continued lessee preference would maintain the current operator and grazing practices, thus likely maintaining the status quo in terms of range condition and productivity.

4.3.5.1 Rare Plants

The Mitigated Exchange alternative would have no impact on rare plants.

4.3.5.2 Noxious Weeds

Any new roads, wheel tracks, or other vehicular access routes required to implement either the Proposed Action or the Mitigated Exchange alternative would become potential invasion routes for noxious weeds that tend to spread along travel routes (spotted knapweed, Canadian thistle, etc.).

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[35] In this context, private exchanges are exchanges between the state and private individuals and this mitigation option is not part of the private exchange program between BLM and private individuals mandated by the CBSA.

4.3.6 Wildlife Habitat and Fisheries

The Mitigated Exchange alternative would have the same impact on wildlife and fisheries as the proposed action. Delayed implementation would have to cause a delay of more than five years to affect the timing of future entries for timber harvest in any of the parcels (the state could presumably plan a timber sale in conjunction with Elk Mountain A and adjacent state lands in the next five years, but all other plans for timber harvest on exchange lands are currently 10-20 years before a projected first entry). The state will harvest an existing timber sale with helicopters on state lands adjacent to the Blacktail Creek tract, regardless of the outcome of the exchange. Because this harvest is being completed now on adjacent lands, future entry into the Blacktail Creek tract for timber harvest would be delayed a minimum of 10-20 years if the exchange occurs. This delay will help minimize impacts to wildlife security and the local watershed.

4.3.6.1 Threatened and Endangered Species

Like the other alternatives, the Mitigated Exchange alternative would have no impact on threatened or endangered species.

4.3.7 Recreation

The Mitigated Exchange alternative would have the same impact as the Proposed Action on recreation. Delayed implementation would forestall the exchange and unless the later exchange is based on values set at the present, the recreational influence over the value of land is likely to increase the value of the BLM properties relative to state parcels on the Crow Reservation. Delayed implementation would run the risk of diminishing the acreage and the associated monetary return the state would receive from the exchange.

4.3.8 Cultural Resources

Cultural resources would not be affected under the Mitigated Exchange alternative. The same Memorandum of Understanding for Cultural Resources (MOU) would be in effect under the Mitigated Action alternative as it would with the Proposed Action. Delayed implementation might lengthen the time for cultural resource assessment of state lands within the Crow Reservation by the Crow Tribe.

4.3.9 Access

Access easements, if granted to lessees prior to the exchange, will allow them to reach and cross former state lands to maintain ranch operations that were dependent on that access. This would be a benefit to the lessee, particularly if the lessee could not be guaranteed such access under tribal ownership. The state also would benefit, to the degree that it recovers sufficient monetary return from the easements to compensate for any value diminished in the appraisal as a result of granting such easements.

The state does not normally process access easement applications unless it can be shown that legal access is already available up to the point of entry to a state lease parcel. That may be difficult to show in the first exchange because the state lands are surrounded by tribal trust lands and allottee lands.

The Crow Tribe has already indicated that it opposes granting such easements because it places an encumbrance on the land they will receive and, more importantly, because it will not allow the Tribe to capture the monetary benefit, even if the Tribe is in agreement with granting access.

4.3.10 Socioeconomics

Most of the impact discussion under the Mitigated Exchange alternative is concentrated in this section, since, ultimately, most of the impact of the exchange is socioeconomic in nature.

4.3.10.1 Delayed Implementation

Delayed implementation of the exchange allows the *status quo* to continue for some indefinite period to grant lessees additional time to make individual adjustments in their operations to compensate for the loss of the state leases. These adjustments may include changing the configuration of pastures to eliminate dependence on a state parcel, development of replacement stock water, negotiating for the sale or lease of replacement pasture, herd reduction to adjust to a reduced resource base, or even selling the ranch and reestablishing operations elsewhere. While these adjustments probably would cost the lessee money, the impact can be mitigated if the costs are spread over a longer time. Delayed implementation grants the benefit of this additional time, and the benefit is primarily to the state lessee, although federal lessees also would be subject to lower lease rates for a longer time.

The state, by virtue of the Land Board exchange criteria, has to benefit, or at least not be harmed, in order for the exchange to be approved. Assuming that the state would benefit in the exchange, delayed implementation would delay the state's receipt of any enhanced benefits that would be gained by the exchange and might run the risk of diminishing those benefits if delay increases the differential in land values that already exists between the Crow Reservation and the BLM lands in Beaverhead County. The recreational land market in Beaverhead County has already created a substantial differential of approximately $350/acre when compared to land on the Crow Reservation[36]. There is every indication from the appraisal reports that these western Montana lands will continue to appreciate in value faster than lands on the eastern plains. Thus, the longer implementation is delayed, the more likely it will be that the state will receive less acreage than originally proposed.

The exchange is being done primarily for the benefit of the Crow Tribe, and the Tribe would also not be able to begin benefiting immediately from the exchange if it were delayed. Any state benefit from the exchange would be foregone for the duration of any delayed implementation.

4.3.10.2 Access Easements

The effect of access easements as a way of mitigating impacts to current state lessees is described under Section 4.3.9 Access. While it might be useful in future exchanges where state tracts separate deeded lands owned by the lessee, none of the lessees involved in the initial exchange have as yet expressed an interest in this option. This may be because of the difficulty showing legal access up to the point of entry of the state section and the requirement that this be demonstrated before an easement application can be processed.

4.3.10.3 Cost Sharing

The Socioeconomics impact section of the Proposed Action (4.1.10), notes that one of the associated impacts that may occur with the exchange is that lessees will not only lose their lease, but under Tribal Resolution 75-22, would be responsible to bear all costs of fencing, if fencing were the only way to realistically separate current and future uses of the parcel. The cost sharing mitigative measure would take the stance that, if fencing is required, it would benefit both parties, and in fairness to all, both parties should share equally in the cost of the fencing. Under this measure the exchange would be contingent upon an agreement with the Tribe that Tribal Resolution 75-22 would have no force or effect over lands acquired under this exchange by the state.

4.3.10.4 Continued Lessee Preference

Continued Lessee Preference is a variation of delayed implementation. Basically it would allow the exchanges to go forward, avoiding delay of any benefit to the state or the Crow Tribe, but it would allow, with the Tribe's assent, continued lessee preference until the end of the current lease term. This means that the lessee would have to pay the higher tribal lease rate, but would have the same additional time that delayed implementation would give, to plan and implement adjustments to current operations (changing the configuration of pastures to eliminate dependence on a state parcel, development of replacement stock water, negotiating for the sale or lease of replacement pasture, herd reduction to adjust to the future resource base, selling and reestablishing operations elsewhere, or other measures).

Even though the Tribe would begin getting the higher lease rate immediately under the Continued Lessee Preference, some important benefits to the Tribe would be foregone. The reason is that at least part of the benefit to the Tribe is the benefit to individual tribal members that will have the opportunity to compete for the tribal lease, where they may have been effectively precluded from doing so under the preference granted the state lessee. Since the Tribe leases to members at a lesser rate than to non-Indians, it is assumed the Tribe has as much interest in the benefit to individual members as it does in the collective monetary benefit to the Tribe in the acquisition of these lands.

Allowing the exchange to go forward would have the same benefit to the state as the proposed action, in that it would allow the state to capture the benefit of the exchange immediately and would avoid the erosion of this benefit by differential escalation of land values.

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[36] Differentials are based on average values established by the appraisal reports for the BLM and state lands involved in the exchange. The appraisals were completed in January 1997 by the appraisal firm of Hoeger-Jackson of Bozeman, Montana.

4.3.10.5 Private Exchanges

Private exchanges between the state and the current state lessee would be proposed only when a parcel critical to a ranch operation would be lost through a CBSA exchange. There would be a benefit to the present lessee, in that the private exchange would ensure continued viable ranch operation, even though equivalent value land would still be given up at a less critical location on the ranch. The Crow Tribe would still receive the same benefit of state land being converted to tribal trust land. However, no private exchanges are proposed in this phase of the exchange process.

4.3.11 Hydrologic and Soil Resources

The Mitigated Exchange alternative would have the same impacts as the Proposed Action alternative for these impacts.

4.4 Comparison of Alternatives

Table 4-2 compares the alternatives by examining the various impacts for:

1. Board of Land Commissioners' seven criteria for land exchanges,
2. Impacts relating to various significant resource issues described in Chapter 3, Affected Environment.

Table 4-2 Alternative Comparison and Impact Summary

Table 4-2 Alternative Comparison and Impact Summary

Table 4-2
Alternative Comparison and Impact Summary

Issue		Proposed Action	No Action	Mitigated Exchange
Board of Land Commissioners Criteria				
1.	Equal or greater value	The state would exchange 11 parcels and tracts worth $821,400 for as many BLM lands as it takes to equal that value. The five BLM properties are worth $$1,089,546.00, which exceeds the value of the state lands by $268,146. This value would be applied to subsequent exchanges.	Under the No Action alternative, there would be no exchange.	BLM and the state have agreed to accept appraised values as the basis for exchange for a two year period, starting with the acceptance of the appraisal by DNRC and BLM (March 25, 1998). Delayed implementation may diminish the acreage received by the state because the lands in the Beaverhead are appreciating faster than those on the Crow Reservation and the state would receive less land if this two year period is exceeded.
2.	State land bordering on navigable lakes and streams	None of the state tracts border or are crossed by any navigable or other significant perennial streams. The Blacktail Creek tract of BLM has a small perennial stream bisecting it.	Under the No Action alternative, there would be no exchange	Same as Proposed Action
3.	Equal or greater income to the trust	State tracts would produce $5,303.98 in 1998 from grazing. BLM lands acquired in the exchange have the potential to produce $10,512.42 per year from grazing and timber.	Under the No Action alternative, there would be no exchange and the present revenue stream would continue if the state tracts remain leased.	Delayed implementation would defer increased benefits to the state. Access easements may allow the capture of some additional value before the exchange. Continued lessee preference will provide the same benefit as the proposed action.
4.	Equal or greater acreage	Because BLM is constrained to exchange on the basis of equal appraised value, the state will receive fewer acres of BLM land, but the land acquired will be more valuable, as determined by appraisal. The state would exchange 5355.92 acres for 1411.3 acres of BLM land.	State acreage would remain the same because the exchange would not occur.	Same as the proposed action.
5.	Consolidation of state lands	Each of the BLM tracts would increase the acreage of larger, already consolidated state tracts	State tracts would remain in their present configuration.	Same as the proposed action.
6.	Potential for long term appreciation	The BLM tracts are in an area that is appreciating much faster than the lands on the Crow Reservation. All indications at present are that this trend will continue.	Opportunities for future exchanges of BLM lands within the general area would diminish, unless the state lands are from areas of similar rapid appreciation.	Delayed implementation may lessen the acres ultimately exchanged to the state because of the appreciation differential.

Table 4-2
Alternative Comparison and Impact Summary

Issue	Proposed Action	No Action	Mitigated Exchange
7. Access	The state tracts are generally not accessible to the public. This exchange would increase the amount of accessible acres of state lands generally, but would not increase access to public lands, because the public's access to the BLM lands acquired would remain the same as before the exchange, with the exception that off-road vehicular travel (if any was occurring) would be restricted.	Since no exchange would occur, access would remain as at present with the state tracts remaining inaccessible to the public (with one exception). BLM tracts would remain under BLM's access and travel policies.	Same as the Proposed Action.
Public and Agency Issues by Resource Topic			
1. Grazing Costs	BLM leases grazing for $1.35/AUM; the state minimum rate is $4.01/AUM; and the Crow rate ranges over about $8.00- $20.00/AUM. As BLM lands transfer to the state, former BLM lessees would pay a higher state rate. Former state lessees, if they are able to maintain their leases, would be required to pay the higher tribal lease rate.	With No Action, the exchange as proposed would not occur and leases would remain under their present jurisdiction, and presumably at the rate set annually by the BLM and the state.	Delayed implementation would maintain the present lessees and lease rates, perhaps until present leases expire, then would be the same as under the Proposed Action. Continued Lessee Preference would allow state lessees on the Crow Reservation to maintain their leases until they run out, but would begin paying immediately at the higher cost tribal lease rate.
2. Preference Rights	The state would recognize by mutual agreement the BLM lessee as the lessee of record entitled to a state preference right at the end of the lease term. The Crow Tribe, upon converting state lands to tribal trust lands, would grant a preference to tribal bidders, so non-Indian state lease holders would lose their preference right when the exchange occurs.	No Action would maintain the status quo with regard to preference rights.	Delayed implementation would be like No Action (status quo) until the exchange actually occurs, then it would be the same as the Proposed Action. Continued Lessee Preference would also maintain the present state lessee on former state tracts, until the present lease runs out. At that time the tribal preference for tribal member bidders would be in effect.
3. Payment in Lieu of Taxes (PILT)	BLM is required to continue to make PILT payments on former BLM lands exchanged to the state as long as the state retains ownership of the exchanged lands.	Same as the Proposed Action	Same as the Proposed Action

Table 4-2
Alternative Comparison and Impact Summary

Issue	Proposed Action	No Action	Mitigated Exchange
4. Public Access	Public access to the BLM lands would remain the same after they are transferred to the state, with the exception that off-road vehicle use would be restricted and a recreational use permit would be required for recreational pursuits that had no additional cost under BLM management. Only one state parcel had legal public access via Highway 212 crossing the parcel. There would be no legal public access to areas other than the Highway right-of-way following the exchange.	Public access on BLM lands would maintain the status quo under BLM management. state lands would continue to have no legal public access, except for the Custer Creek parcel crossed by Highway 212.	Same as the Proposed Action, except perhaps delayed under the delayed implementation option.
5. Lessee Access	On BLM lands, current lessees would continue as the lessee of record and will enjoy the same access that they had as BLM lessees. On state lands, there would be no continuing preference right. Under tribal administration, access to other operations dependent upon access through the former state lease my be lost to current lessees, or compensation for that access may be required by a new lessee or the Crow Tribe. Current lessees or other individuals may make application for easement up to the time of the actual exchange.	Access for lessees would continue as it currently exists.	The access easements option would allow lessees of state sections to secure access easements from the state that would remain in place after the exchange. Normally to process such an easement, the state would require a demonstration that the lessee had legal access to the state section and that the access requested is critical to maintaining ranch operations.
6. Fencing Costs	Because of the loss of lessee preference rights on state lands that would be exchanged, fencing might be required to separate future users, because the state parcels are generally part of a larger grazing unit with only a perimeter fence. Tribal Resolution 75-22 would require the non-Indian to bear fencing costs if separation of uses from an Indian lessee was deemed necessary.	Preference rights of current lessees would be maintained, lessening the need to separate grazing interests by fencing.	Under the Cost Sharing Option, any exchange that required the current lessee to fence out the former lease lands to alleviate otherwise unavoidable impacts, would be contingent upon an equitable sharing of fencing costs between the current and future lessee.

Table 4-2
Alternative Comparison and Impact Summary

Issue		Proposed Action	No Action	Mitigated Exchange
7.	Reimbursement for Improvements	BLM lessees would continue to enjoy any improvements made to BLM lands involved in the exchange, by virtue of their becoming the state lessees on the parcels. State Law (77-2-206, MCA) requires that state lessees that would lose the use and enjoyment of improvements through an exchange must be compensated for authorized improvements before the exchange is completed.	No reimbursements necessary, since lessees would continue to enjoy the benefits of any improvements they have made.	Same as the Proposed Action.
8.	Access to Water	Exchange of some of the state lands has the potential (especially if fencing occurs) to separate grazing pasture from customary stock water sources. This may have effects both to former lessees and to new lessees. Loss of state parcels with developed water might result in larger grazing areas being unusable without access to that water. State parcels without water development might be unusable to a tribal lessee without access to water on adjacent lands.	The status quo would be maintained.	Same as the Proposed Action
9.	Future Foreseeable Actions	The BLM currently does not actively market timber from its lands in SW Montana, but maintains them for public recreational use. The state would manage the acquired lands to produce the greatest reasonable return to the School Trust. This would entail timber harvesting. These future actions would be subject to environmental review under MEPA.	BLM lands would probably continue to have no timber harvest	Same as the Proposed Action

Table 4-2
Alternative Comparison and Impact Summary

Issue	Proposed Action	No Action	Mitigated Exchange
10. Wildlife Habitat	Wildlife habitat would continue to be maintained after the exchange more or less as at present. However, the state would use selective, intermittent timber harvests rather than wildfire to maintain forest habitats. These harvests would have temporary impacts on wildlife security and travel routes and may displace wildlife during timber harvest activity. Roads, if left open after logging would continue to displace wildlife	There would be no change to present management of wildlife and habitat.	Same as Proposed Action.
11. Cultural Resources	BLM and the state have entered into a Programmatic Agreement with the approval of SHPO and the Advisory Council on Historic Preservation. This agreement would require to state to do a complete cultural survey to federal standards on lands acquired in the exchange if a land use change is proposed that would potentially threaten any cultural, historical, archaeological or paleontological resources.	Respective state and federal requirements would continue to apply to cultural resources as they have in the past.	Same as the Proposed Action.

5.0 CONSULTATION AND COORDINATION

This chapter summarizes state, federal and other agencies consulted in the preparation of this EA.

5.1 Federal Agencies

US Department of Agriculture,
Beaverhead National Forest
US Department of the Interior,
Bureau of Land Management
US Department of the Interior,
Bureau of Indian Affairs
US Department of the Interior,
Fish and Wildlife Service

5.2 State Agencies

Department of Fish, Wildlife and Parks
Department of Natural Resources and Conservation
State Historic Preservation Office
Montana State Library -Montana Natural Heritage Program

5.3 Tribal Government

Crow Tribe

5.4 Local Government

Beaverhead County Commission
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5.5 Non-Governmental Entities

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